Compact disc player CD115/00B/05B

Service
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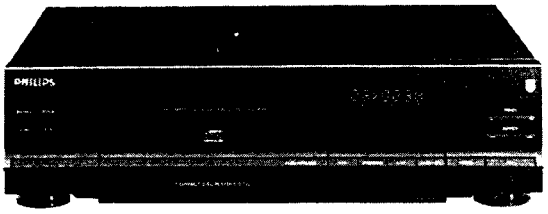

ServiceManual

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TECHNICAL SPECIFICATIONS

General

1.	Mains voltage /00B	: 220V (±10%)
	/05B	: 240V (±10%)
2.	Mains frequency	: 50 - 60 Hz
3.	Mains voltage selection	: See circuit diagram Power Supply
4.	Power consumption mains,operated	: 10W in Play mode
		: 5W in Standby

Line output

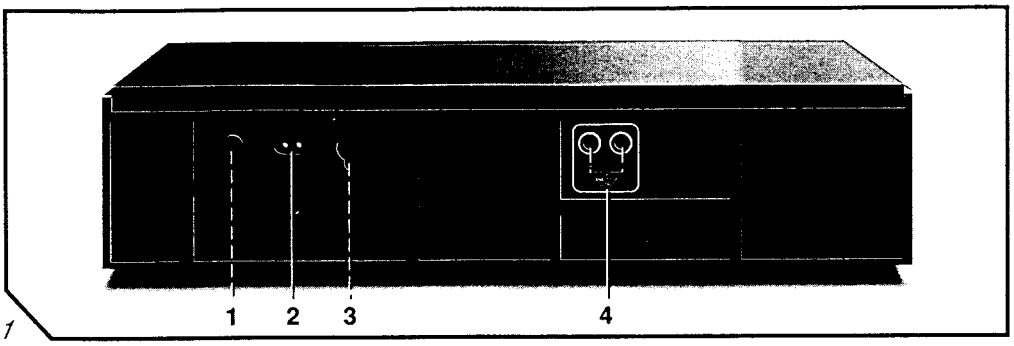
1.	Number of channels	: 2
2.	Output voltage	: 2 Vrms ± 2dB
3.	Unbalance left-right	: max. ± 0,5dB
4.	Output resistance	: 1 kOhm
5.	Amplitude linearity	: max. ± 0,15dB from 20 Hz to 18 kHz
6.	Phase non-linearity	: max. ± 1° from 20 Hz to 18 kHz
7.	Signal to noise ratio	: min. 90dB from 20 Hz to 18 kHz
8.	Dynamic range (-60dB)	: min. 80dB from 20 Hz to 18 kHz (max. 0,01 %)
9.	Total harmonic distortion + noise	: min. 66dB from 20 Hz to 18 kHz (max. 0,05 %)
10.	Intermodulation distortion	: min. 66dB from 20 Hz to 18 kHz (max. 0,05 %)
11.	Out-band attenuation	: min. 50dB above 24,8 kHz
12.	Channel separation	: min. 80dB from 20 Hz to 18 kHz
13.	Muting during random access	: min. 90dB from 20 Hz to 18 kHz
14.	Automatic switched de-emphasis with time constants	: 15/50 µs

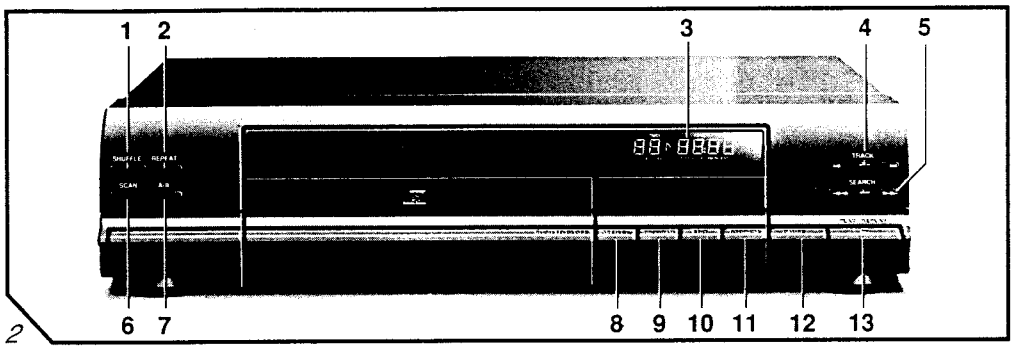
Dimensions and weight

1.	Apparatus tray closed	: WxDxH 360 x 280 x 88/94 mm
2.	Apparatus tray open	: WxDxH 360 x 445 x 88/94 mm
3.	Weight	: 2,7 kg

Optical read-out system

1.	Laser type	: Semiconductor AlGaAs
2.	Wavelength	: 780 nm ± 20 nm
3.	Light output (c.w.)	: 0,4 mW ± 0,04 mW





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CONTROLS

	Indication on App.	Indication in diagram
1.	**SHUFFLE**	1023
2.	**REPEAT**	1016
3.	**Display**	1030
4.	**< TRACK >**	1013 1020
5.	**<< SEARCH >>**	1027 1034
6.	**SCAN**	1022
7.	**A-B**	1015
8.	**OPEN/CL**(ose)	1031
9.	**PROGRAM**	1024
10.	**EDIT**	1035
11.	**STOP/CM**	1029
12.	**PAUSE**	1021
13.	**PLAY/REPLAY**	1014

CONNECTIONS

	Indication on App.	Indication in diagram
1.	**Mains fuse holder (not all versions)**	15
2.	**Mains socket**	BU-1
3.	**Voltage selector (not all versions)**	1077
4.	**ANALOGUE OUT**	BU-2

(GB) **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD

(NL) **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) **WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(SF) Varo!

Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(S) Varning!

Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

(F)

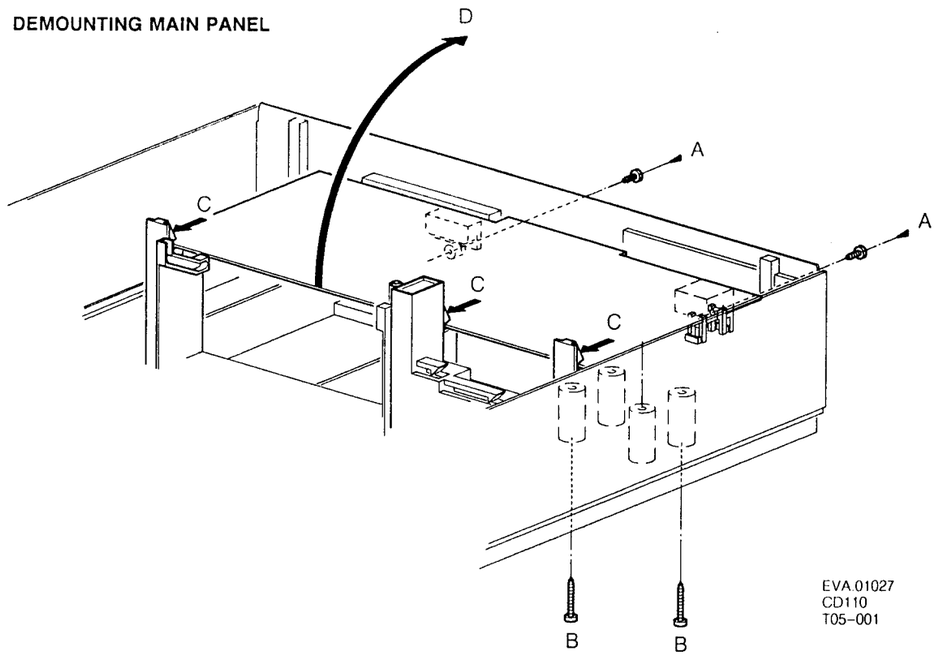
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne"

CLASS 1
LASER PRODUCT
3122 110 03420

DISMANTLING INSTRUCTIONS

DEMOUNTING MAIN PANEL



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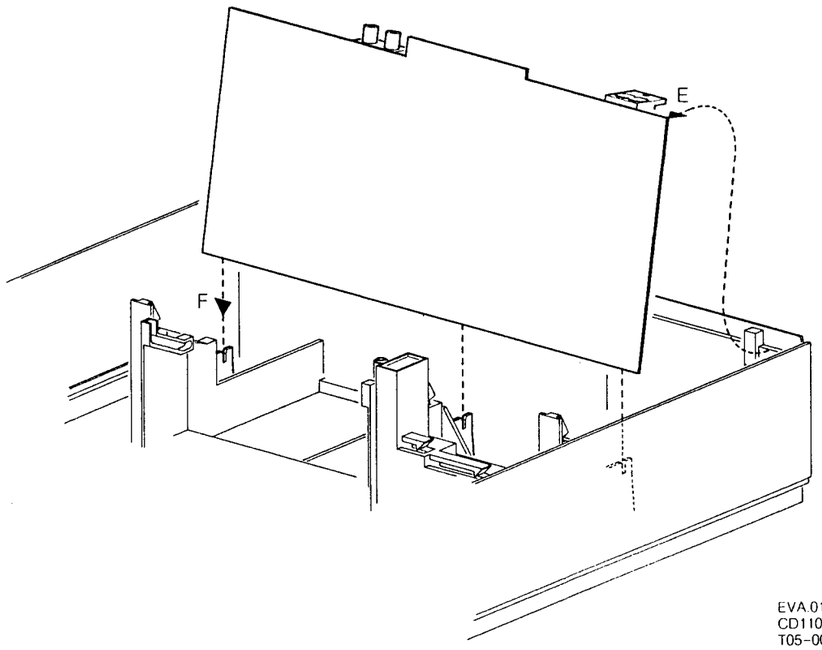
CD110
T05-001

SERVICE POSITION MAIN PANEL



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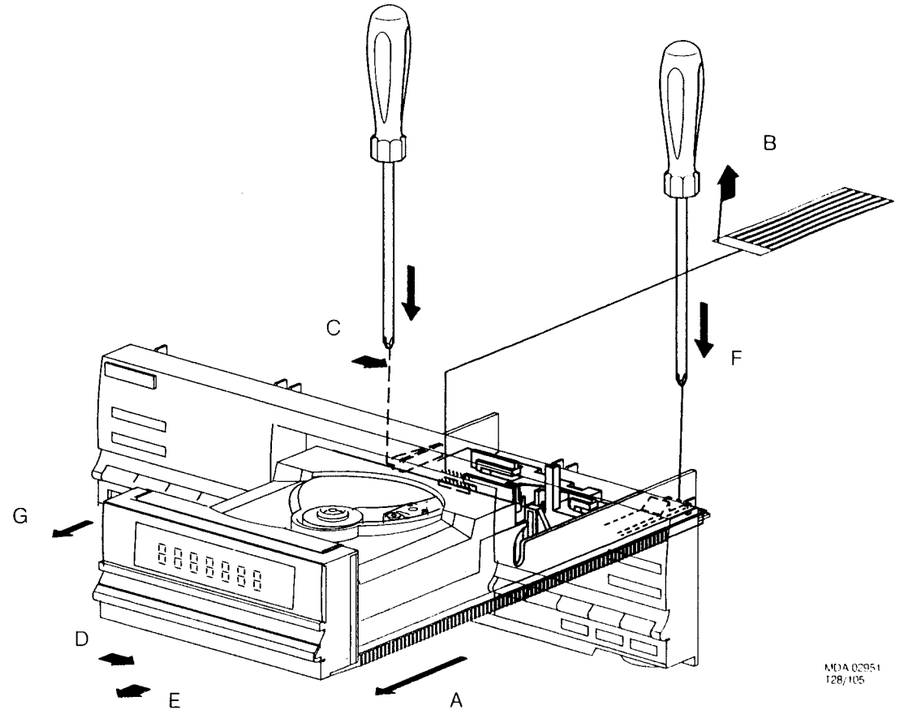
4

DEMOUNTING LOADING



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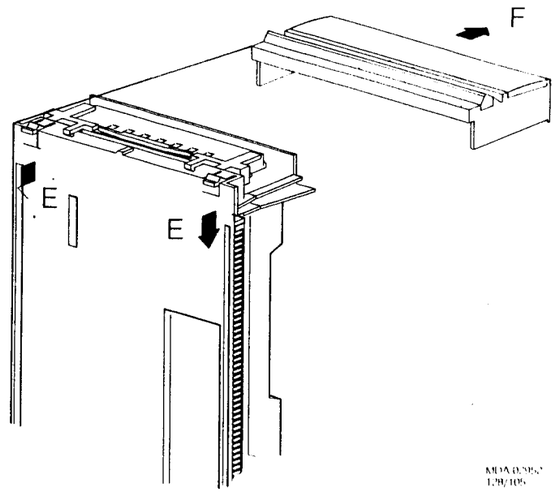
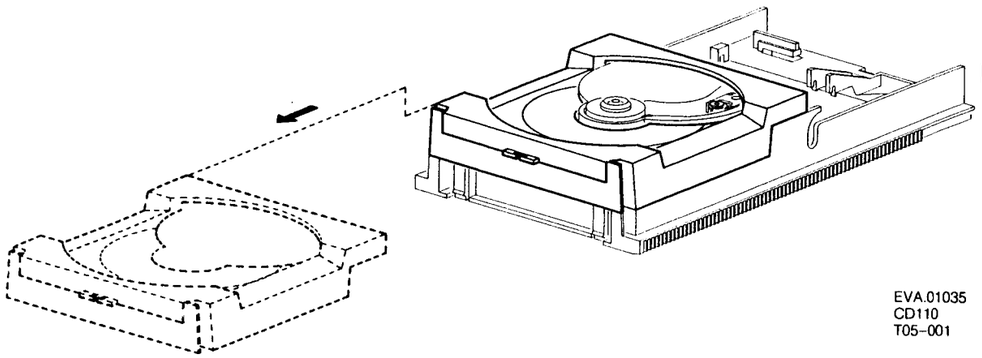
128/105

DEMONTING TRAY FRONT



HAS.CD320.DEM-TRAYFRONT

DEMOUNTING CDM



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CD110
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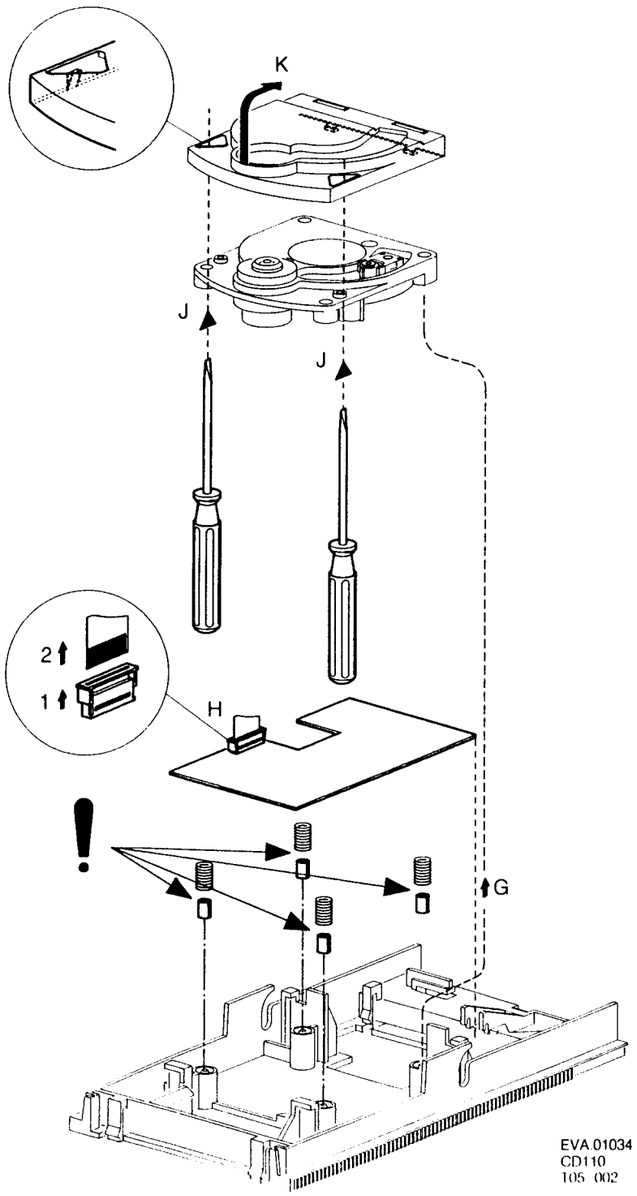

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CD110
T05-002

3. SERVICING HINTS

When the tray mechanism and CDM-unit has been disassembled the player can be prepared for measurements by bridging or activating the "laser safety switch" SK3 on the photo diode signal controller panel.

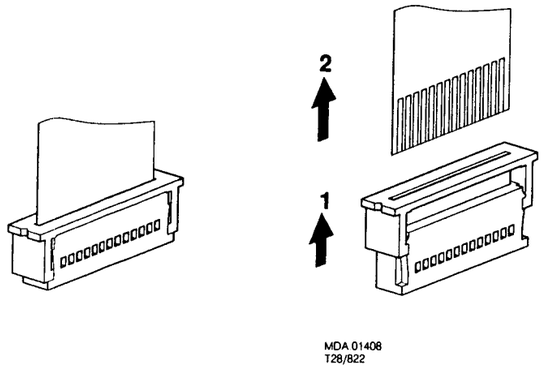
Service disc hold-down

The disc should always rest properly on the turntable. To achieve this a disc hold–down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used. For a service disc hold–down see the figure below.
Compose a service Disc hold-down in the following way.

- Cut in the most inner ring of a disc holddown (4822 462 50383) with small and sharp nippers See fig. below.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases after certain time of use, the diameter has to be enlarged with a pencil or ballpoint again.

SERVICE TOOLS

Audio signal disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A	4822 397 30096
Disc (65 min 1kHz)without pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable (4p)	4822 321 21284
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Green LED CQY G11	5322 130 32182
Infra red remote control e.g.	4822 218 10324



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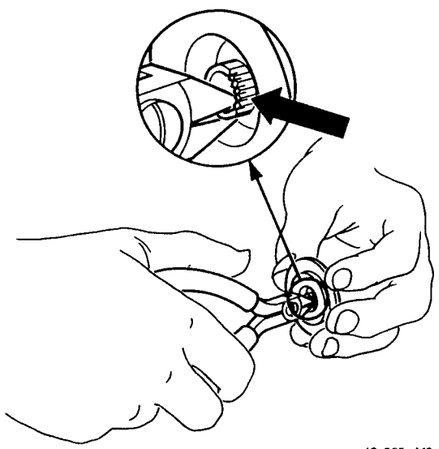
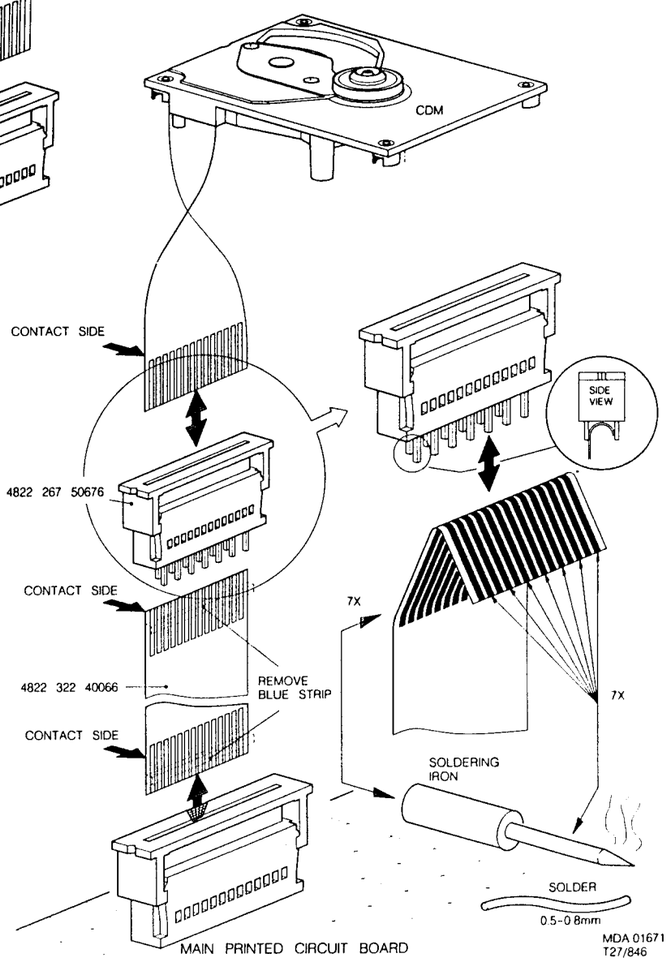
T28/822



42 565 A12

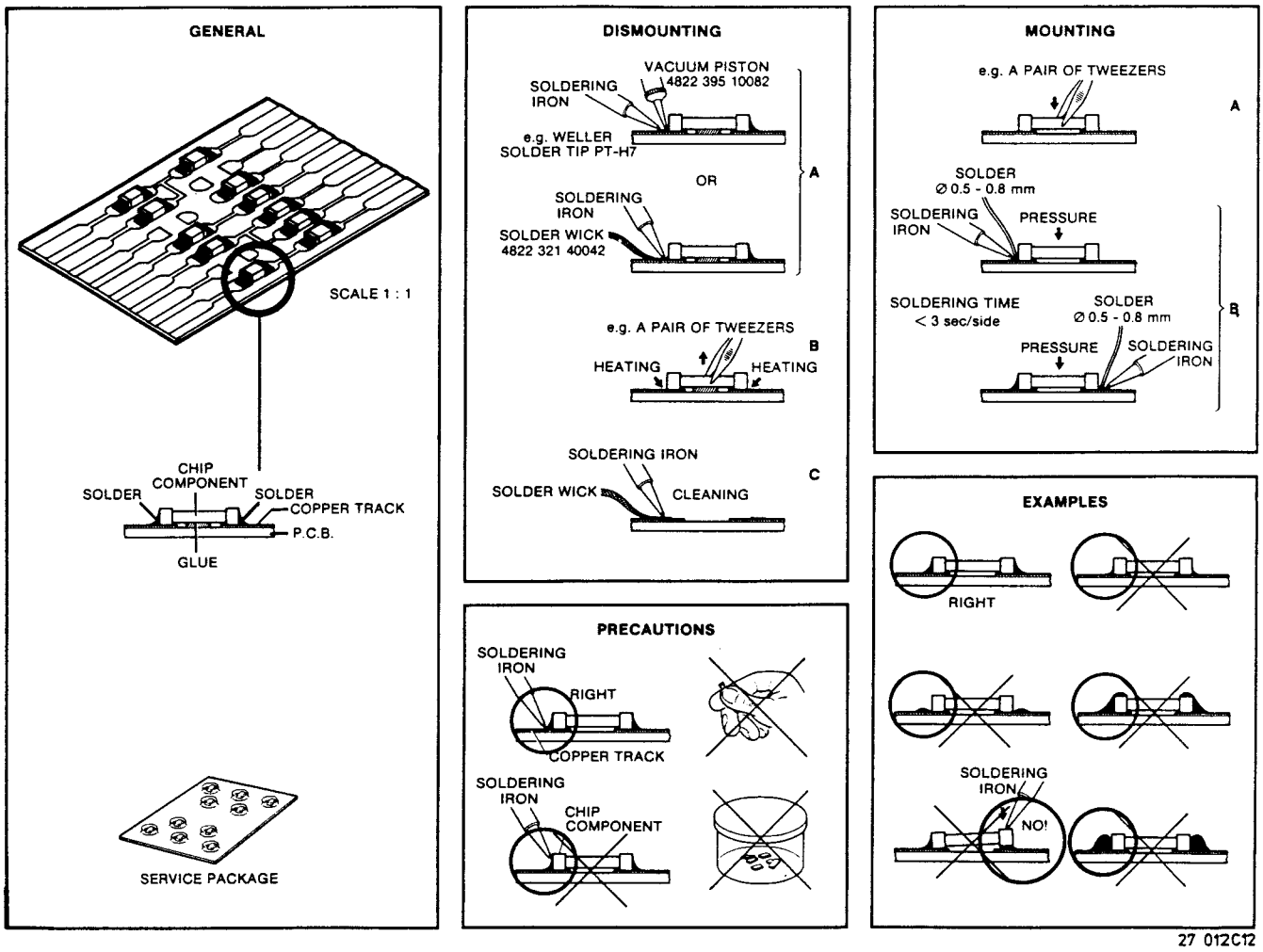
EXTENSION CABLE



MDA 01671
T27/846

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



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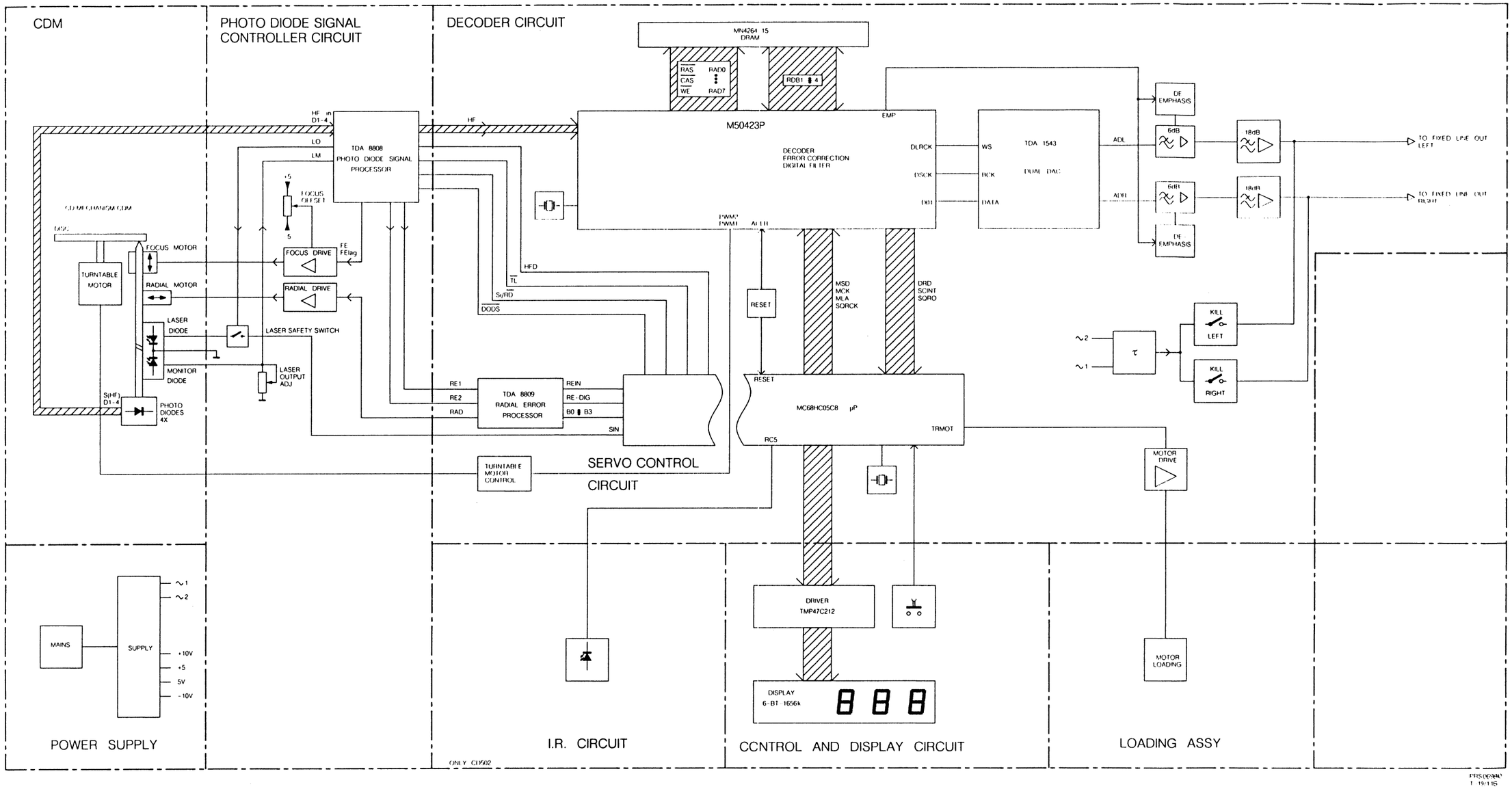
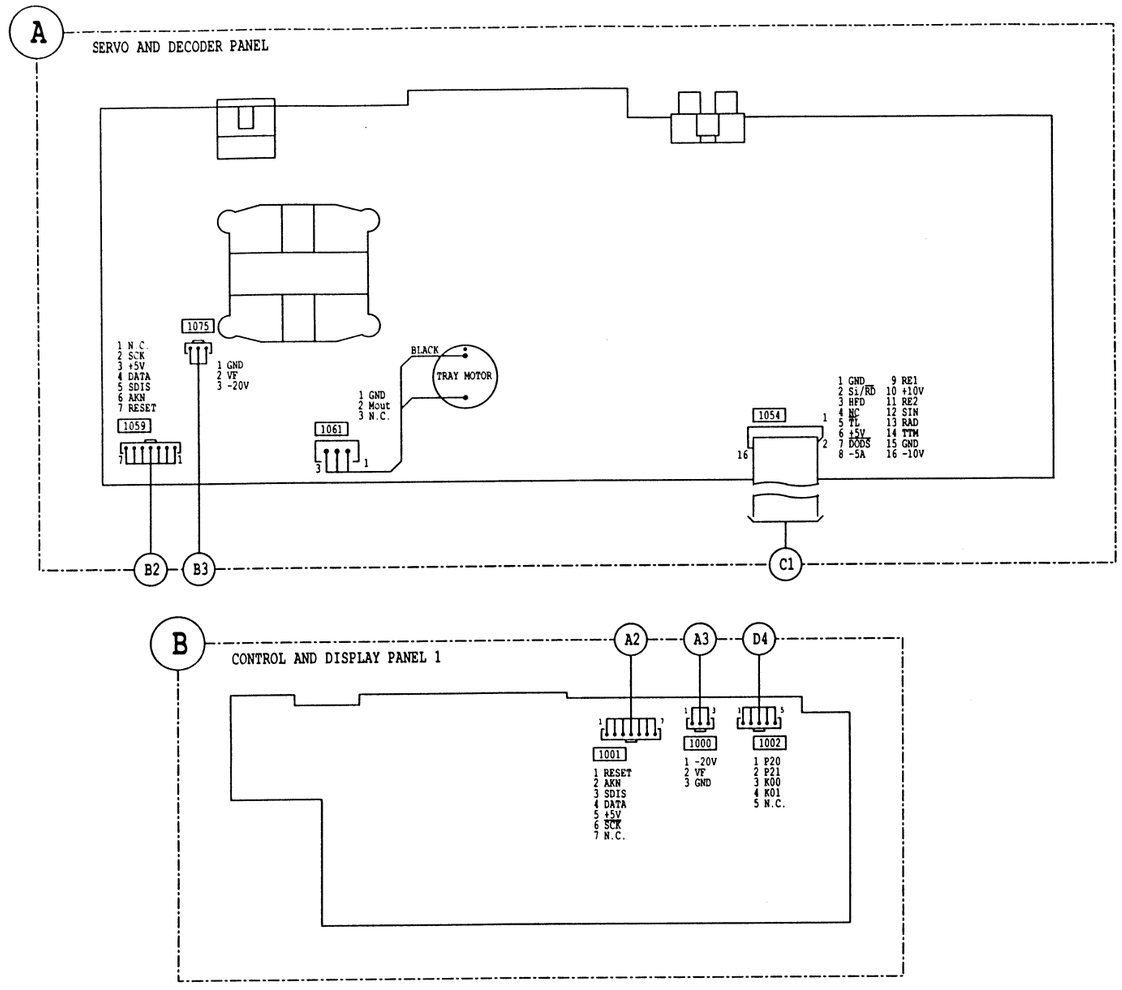
ACLR – µP interface register clear input
AGC – Automatic Gain Control
AOL-R – Analoque output left-right
B0-B3 – Control bits for radial circuit
BCK – Bit clock input
BEQ – Equalizer reference current input
BGC – DC and LF gain control reference input
BPA-C – Display backplane A-C
C16M1 – 1/2 divider input
CAS – Column address strobe signal output
Cosc1 – Capacitor wobble oscillator
Cosc2 – Capacitor wobble oscillator
CS – Chip select
D1-D4 – Photodiode currents
DASEL1-4 – DAC interface format select
DATA – Data input
DEC – Decoupling input internal bypass
DET – HF detector voltage input
DI – Serial data input
DISBL – Display blank
DISENA-B – Disenable A-B
DISCLK – Display clock
DISDAT – Display data
DIV4 – Divide by 4 input
DLRCK – Left/right channel clock
DO1 – Dual DAC Rch serial data output
DOBSEL – Data bit select
DODS – Drop out detector suppression
DRD – 8/12 cm Disc detection
DSCK – Data shift clock to DAC
EFFK – EFM frame clock output
EMP – Emphasis flag output
EST2 – Error status 2
FE – Focus error signal
FE lag – Focus error signal for LAG network
FS – Focus starting current
GCHF – Gain control input of HF amplifier
GCLF – Gain control input for AC and LF amplifiers
HF – HF output for DEMOD
HFD – HF detector output for DEMOD
HF-out – HF amplifier and equalizer voltage output
IREF – Current reference
KBSCO-5 – Keyboard scanning 0-5
LM – Laser monitor diode input
LO – Laser amplifier current output
LPF – PLL loop filter
MCK – µP interface shift clock input
MLA – µP interface data latch clock input
MSD – µP interface serial data input
PLLH – PLL on hold output
PWM – Disk motor driving output
RADO-7 – Address output
RAD – Radial drive input
RADout – output of RE2-RE1 input
RAS – Row address strobe signal output
RDB1-4 – Data input/output
RE – Radial error signal (Amplified RE_2-RE_1 currents)
RE1 – Radial error signal 1 (summation of amplified currents D_3 and D_4
RE2 – Radial error signal 2 (summation of amplified currents D_1 and D_2
RE dig – Radial error digital
REin – Radial error input
RE lag – Radial error signal for LAG network
Rosc – Resistor wobble oscillator
Rwob – Wobble generator input
SA1-SC4 – 12 multiplexed outputs
Sc – Starting up capacitor input
SCCK – Shift clock input for serial subcode data output
SCINT – Interrupt output of subcode Q
SCOE1 – Enable input of subcode T
SIN – Tray switch
Si/RD – On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesfull.
SK – Serial clock input
SQRCK – Subcode Q register
SQRO – Subcode Q register output
TEST1 – Test control input
TL – Track loss output signal
TLC – Output from slice level control
TTM – Control voltage for turntable motor
Vext+ – Supply connection
Vext– – Supply connection
VLCD – Supply liquid crystal display
WE – Write enable output
WS – Word select input
XI – Crystal oscillator input
XO – Crystal oscillator output

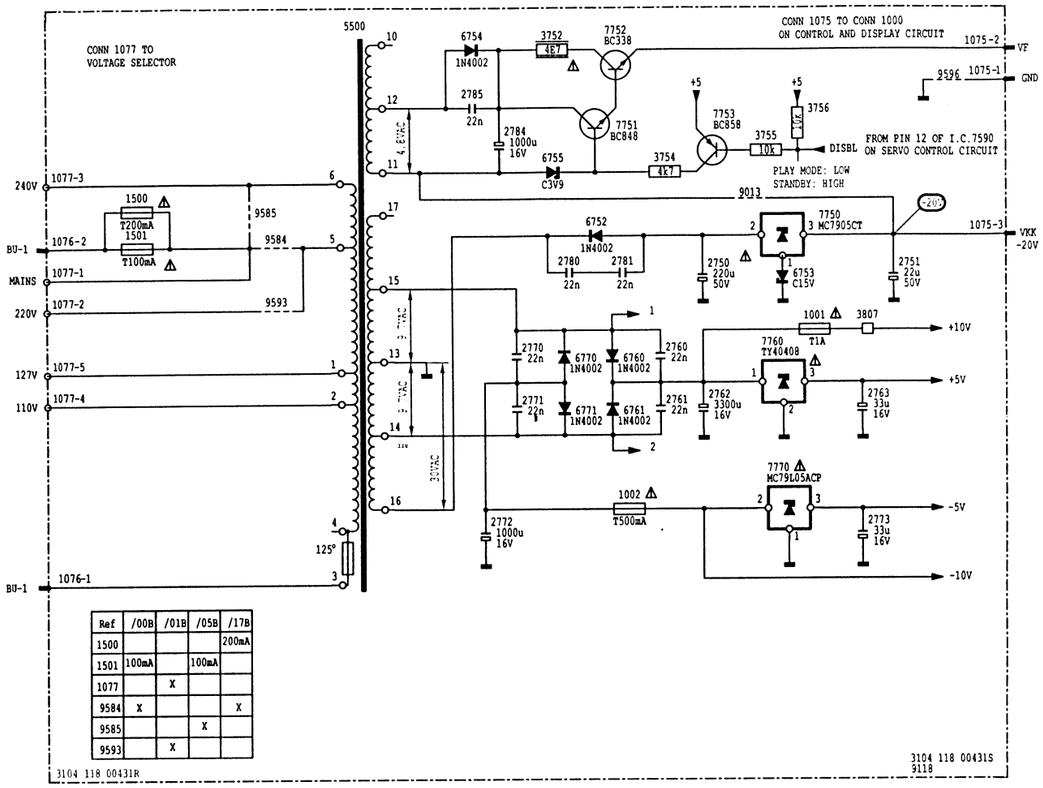
BLOCK DIAGRAM



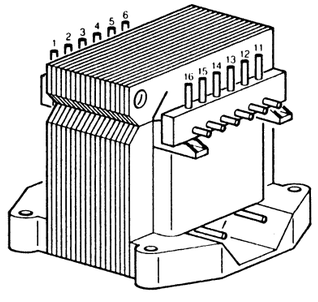
WIRING DIAGRAM

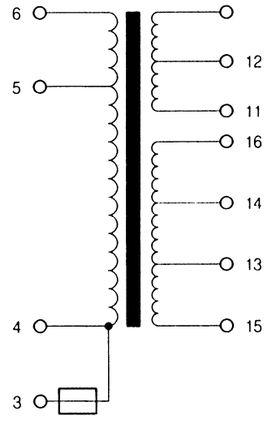


POWER SUPPLY



TRANSFORMER CONNECTIONS





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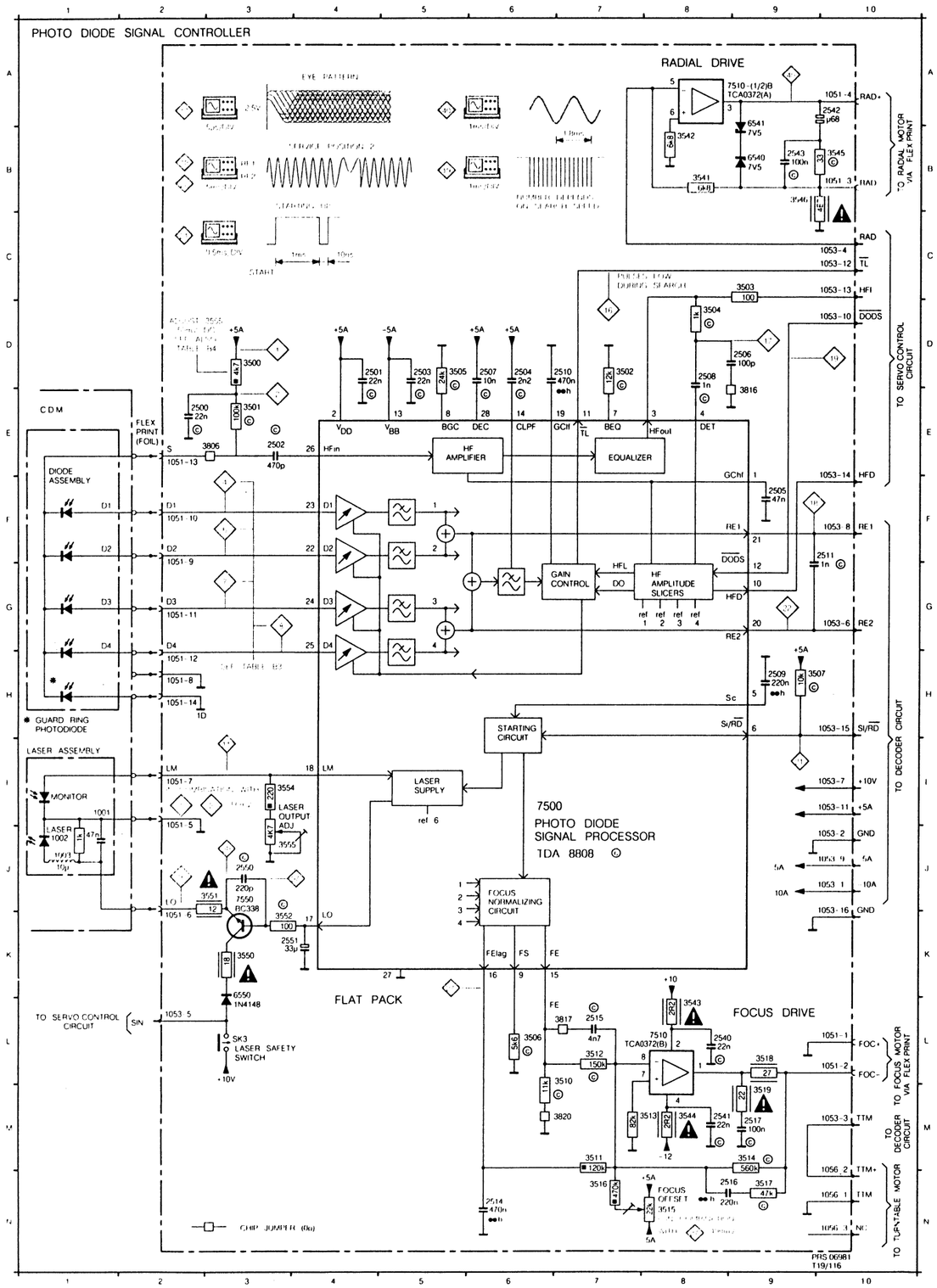
T05-117

PHOTO DIODE SIGNAL CONTROLLER

SK3 L3	2503 D5	2510 D6	2541 M8	3502 D7	3511 M7	3518 L9	3546 B9	3816 E9	7510 A8
1001 L1	2504 D6	2511 F9	2542 A10	3503 C9	3512 L7	3519 M9	3550 K3	3817 L7	7510 L8
1002 J1	2505 F9	2514 N6	2543 B9	3504 D8	3513 M7	3541 B8	3551 J3	3820 M7	7550 J3
1003 J1	2506 D9	2515 L7	2550 J3	3505 D5	3514 M8	3542 B8	3552 K3	6540 B9	
2500 E2	2507 D6	2516 N9	2551 K3	3506 L6	3515 N8	3543 L8	3554 I3	6541 B9	
2501 D4	2508 D8	2517 M9	3500 D3	3507 H9	3516 N7	3544 M8	3555 J4	6550 L3	
2502 E3	2509 H9	2540 L8	3501 E3	3510 M7	3517 N9	3545 B10	3806 E3	7500 I6	



PANEL COMPONENT SIDE

SK3 A1	2503 D3	2510 D3	2541 A2	3502 C2	3511 C2	3518 B1	3546 B1	3816 D2	7510 B1
1051 D3	2504 D2	2511 D1	2542 B1	3503 B3	3512 D1	3519 A1	3550 E3	3817 D2	7550 E3
1053 A3	2505 C2	2514 C1	2543 A1	3504 C2	3513 A3	3520 B3	3551 E3	3820 D1	9545 D3
1061 F3	2506 C2	2515 E1	2550 F3	3505 C2	3515 A3	3541 B2	3552 E3	6540 B2	9579 A3
2500 D3	2507 D3	2516 C1	2551 E4	3506 C2	3516 A3	3542 B2	3553 A1	6541 B2	9580 A3
2501 D3	2508 C2	2517 A2	3500 B3	3510 D1	3517 C1	3543 A1	3554 B3	6550 C1	9581 E3
2502 D2	2509 C2	2540 A1	3501 D3	3511 C2	3518 B1	3544 A2	3555 B3	7500 D2	9582 A1
2503 D1	2510 D3	2541 A2	3502 C2	3512 D1	3519 A1	3545 A2	3816 C2	7510 B1	9583 B2
2504 D2	2511 D1	2542 B1	3503 B3	3513 A3	3520 B3	3546 B1	3817 D2	7550 E3	9586 D4
2505 C2	2514 C1	2543 A1	3504 C2	3514 C1	3541 B2	3550 E3	3820 D1	9545 D3	9587 E3
2506 C2	2515 E1	2550 F3	3505 C2	3515 A3	3542 B2	3551 E3	6540 B2	9579 A3	9588 D3
2507 D3	2516 C1	2551 E4	3506 C2	3516 A3	3543 A1	3552 E3	6541 B2	9580 A3	
2508 C2	2517 A2	3500 B3	3510 D1	3517 C1	3544 A2	3553 A1	6550 C1	9581 E3	
2509 C2	2540 A1	3501 D3	3511 C2	3518 B1	3545 A2	3554 B3	7500 D2	9582 A1	
2510 D3	2541 A2	3502 C2	3512 D1	3519 A1	3546 B1	3555 B3	7510 B1	9583 B2	
2511 D1	2542 B1	3503 B3	3513 A3	3520 B3	3550 E3	3816 C2	7550 E3	9586 D4	
2514 C1	2543 A1	3504 C2	3514 C1	3541 B2	3551 E3	3817 D2	9545 D3	9587 E3	
2515 E1	2550 F3	3505 C2	3515 A3	3542 B2	3552 E3	3820 D1	9579 A3	9588 D3	
2516 C1	2551 E4	3506 C2	3516 A3	3543 A1	3553 A1	6540 B2	9580 A3		
2517 A2	3500 B3	3510 D1	3517 C1	3544 A2	3554 B3	6541 B2	9581 E3		
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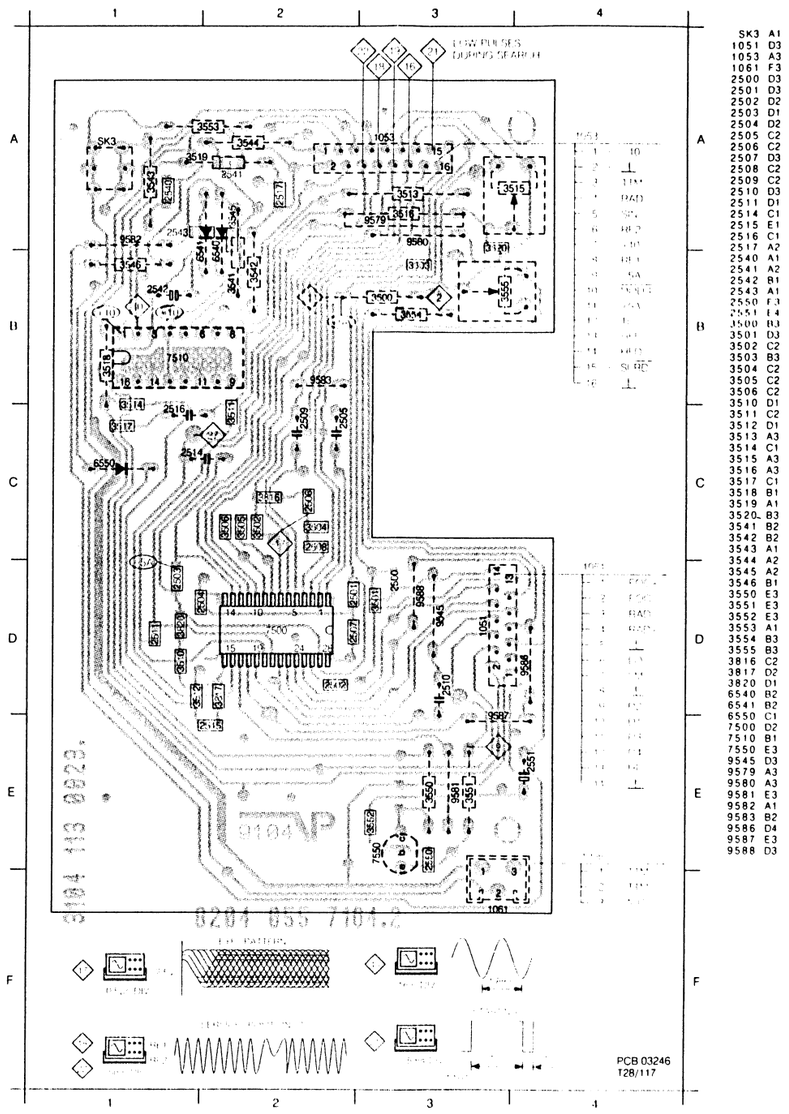
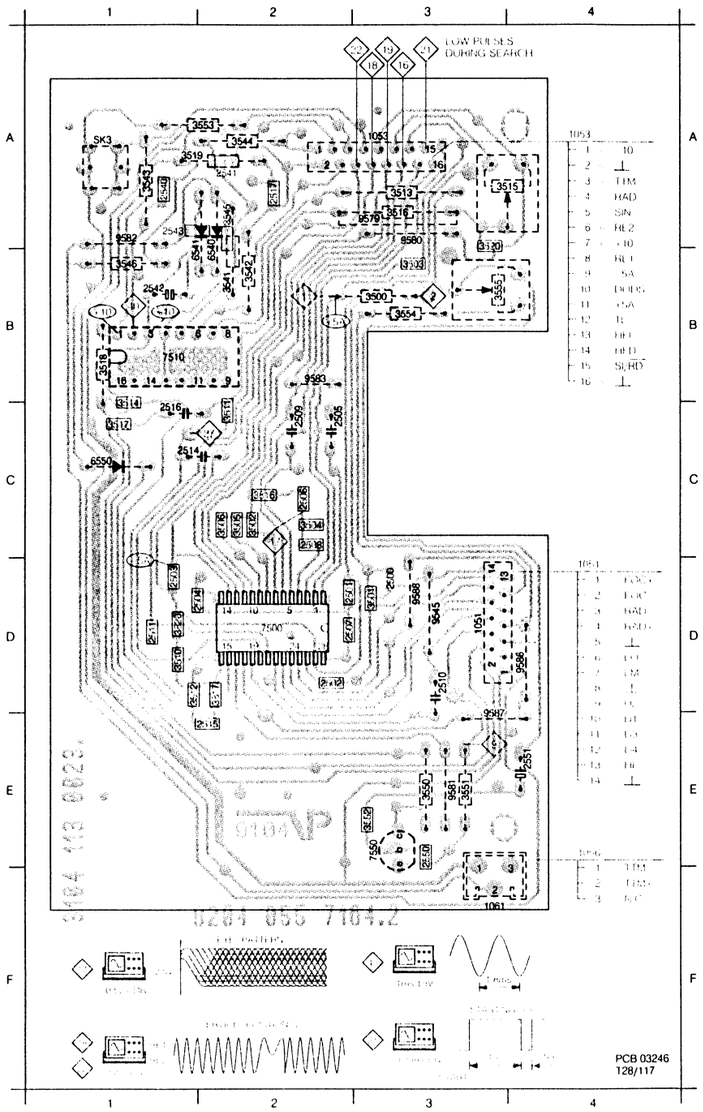
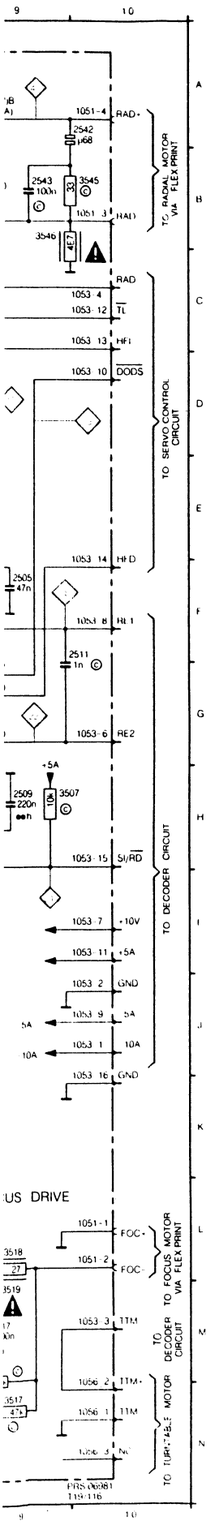


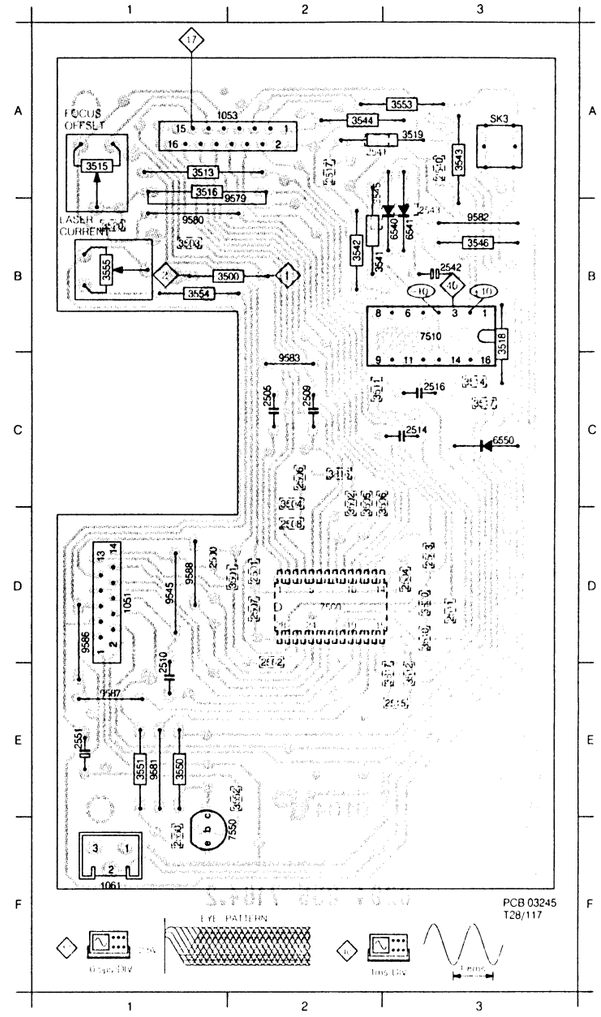
PANEL COMPONENT SIDE



SK3 A1
1051 D3
1053 A3
1061 F3
2500 D3
2501 D3
2502 D2
2503 D1
2504 D2
2505 C2
2506 C2
2507 D3
2508 C2
2509 C2
2510 D3
2511 D1
2514 C1
2515 E1
2516 C1
2517 A2
2540 A1
2541 A2
2542 B1
2543 A1
2550 F3
2551 E4
3500 B3
3501 D3
3502 C2
3503 B3
3504 C2
3505 C2
3506 C2
3510 D1
3511 C2
3512 D1
3513 A3
3514 C1
3515 A3
3516 A3
3517 C1
3518 B1
3519 A1
3520 B3
3541 B2
3542 B2
3543 A1
3544 A2
3545 A2
3546 B1
3550 E3
3551 E3
3552 E3
3553 A1
3554 B3
3555 B3
3816 C2
3817 D2
3820 D1
6540 B2
6541 B2
6550 C1
7500 D2
7510 B1
7550 E3
9545 D3
9579 A3
9580 A3
9581 E3
9582 A1
9583 B2
9586 D4
9587 E3
9588 D3



PANEL SODER SIDE



SK3 A3
1051 D1
1053 A1
1061 F1
2500 D1
2501 D2
2502 E2
2503 D3
2504 D3
2505 C2
2506 C2
2507 D2
2508 D2
2509 C2
2510 E1
2511 D3
2514 C3
2515 E3
2516 C3
2517 A2
2540 A3
2541 A2
2542 B3
2543 B3
2550 F1
2551 E1
3500 B1
3501 D2
3502 D2
3503 B1
3504 D2
3505 D2
3506 D3
3510 D3
3511 C2
3512 E3
3513 A1
3514 C3
3515 A1
3516 A1
3517 C3
3518 C3
3519 A2
3520 B1
3541 B2
3542 B2
3543 A3
3544 A2
3545 B2
3546 B3
3550 E1
3551 E1
3552 E2
3553 A3
3554 B1
3555 B1
3816 C2
3817 E3
3820 D3
6540 B3
6541 B3
6550 C3
7500 D2
7510 B3
7550 F2
9545 D1
9579 A1
9580 B1
9581 E1
9582 B3
9583 C2
9586 D1
9587 E1
9588 D1

11

SERVO CONTROL

OF IC7570 ON DECODER CIRCUIT

TO PIN 24 · TO PIN 26 · TO PIN 27 · TO PIN 29 · TO PIN 12 · TO PIN 13 · TO PIN 14

CRD · SCINT · SCRO · SCRCK · VSD · VCK · VLA

6680 1N4002 · 6681 1N4002 · 6682 1N4002 · 6600 1N4148 · 6685 5V8

2680 33µ · 3680 680 · 3681 22k · 2681 33µ

3582 10k · 3579 10k · 3576 10k · 3577 10k · 3584 10k

RESET · +5V · 3601 4R7

1601 4MHz · 3602 22k · 3603 220k · 2601 22n · 2600 33µ 16V

+5V · 3591 22k

7590 MC68HC05C8

CPU · TIMING · I/O PORTS

D2 D0 B6 B7 B2 B3 B4 · D5 A1 A2 A3 A4 · A0

D7 A7 A6 D3 D1

3815 · 3597 1k · 3598 1k · 3605 10k · 3606 10k

1054-3 NC · 1054-5 $\overline{TL}$ · 1054-7 DODS · 1054-2 SI/$\overline{RD}$ → TO CONN 1053 ON PHOTO DIODE SIGNAL CONTROLLER CIRCUIT

+5V · 3571 4R7

3608 470 · 7600 BC328 · +5B · 3578 47k

3607 470 · 7601 BC848 · 3509 10k · 7602 BC848 · 2578 16V 1µ

$\overline{ACLR}$ → TO PIN 15 OF IC7570 ON DECODER CIRCUIT

7570 TDA8809 · B0 B1 B2 B3 · FUNCTION DECODER · 3½-BIT DAC

RADIAL · LAG SHORT

3539 12k · 2530 220n · Cagc

3530 47k · 3531 15k · 2531 8n2 · 2532 8n2 · Rosc · Rwob · Cosc1 · Cosc2

-5A · -5V · +5V · 3538 4R7 · 3532 4R7 · 2554 100n · 3536 220k · 2535 330n · +5A

V_{EXT-} · V_{DD} · LAG · V_{EXT+}

0° · 90° · 45° · WOBBLE OSCILLATOR 650Hz

6 · LAG HOLD · U/I · 15

− RADIAL · RE_IN · 16 · − LAG SHORT · RE_LAG · 17 · 3534 5k1 · 2534 47n

RE_LEAD · 19 · 3535 18k · 3533 1k8 · Vref

3590 22k · 3540 22k · :4 · DIV4 · REdig · 7

GAIN INTEGRATING AMPLIFIER · OFFSET INTEGRATING AMPLIFIER

3537 220k

TO CONN 1053 ON PHOTO DIODE SIGNAL CONTROLLER CIRCUIT

1054-6 +5A · 1054-8 -5A · 1054-9 RE1 · 1054-10 +10V · 1054-11 RE2 · 1054-15 GND · 1054-16 10V

RE1 · RE2 · re1/2 re1 re2/2 re2 · Re1+Re2

RADIAL ERROR PROCESSOR

GND · Cpl · Chpl · Vref

2536 220n · 2537 33n · 2538 33n · 2533 33µ

IC7570 ON DECODER CIRCUIT · PIN 2 PWM1 · PIN 3 PWM2

2560 6n8 · 3562 100k · 3561 100k · 3560 100k · 2561 6n8 · 3563 100k · 7560 (1/2) TCA0372 · 3564 22 · 2562 100n

TURNTABLE MOTOR CONTROL

1054-14 TTM · 1054-13 RAD → TO CONN 1053 ON PHOTO DIODE SIGNAL CONTROLLER CIRCUIT

I/O PORTS

C5 C1 C0 B5 B0 C7 C6 C4 C3 C2 · A5

KILL 1 → TO RESISTOR 3686/3685 ON DECODER CIRCUIT

+5V · 3610 12k · 3614 12k · 7560 (1/2) TCA0372 · 3615 · 2610 22n · 3612 2k2 · 3613 2k2 · 3611 4k7 · 2611 22n · 3616 · -10V

6610 1N4002 · 6611 1N4002 · 3617 · 2612 100n

+5V · 3620 15k · 3621 1k · 7620 (1/2) LM393N · -5V · 3623 1k · 6620 1N4148 · 3622 10k · 6621 4V7

1054-12 SIN

1061-1 TRAY · 1061-2 · 1061-3 NC → TO TRAY MOTOR

DISBL → TO RESISTOR 3755/3756 ON POWER SUPPLY CIRCUIT

1059-4 DATA · 1059-5 SDIS · 1059-6 AKN · 1059-7 RESET · 1059-2 SCK

1060-12 +10V · 1060-10 GND → TO CONN 1001 ON CONTROL AND DISPLAY CIRCUIT

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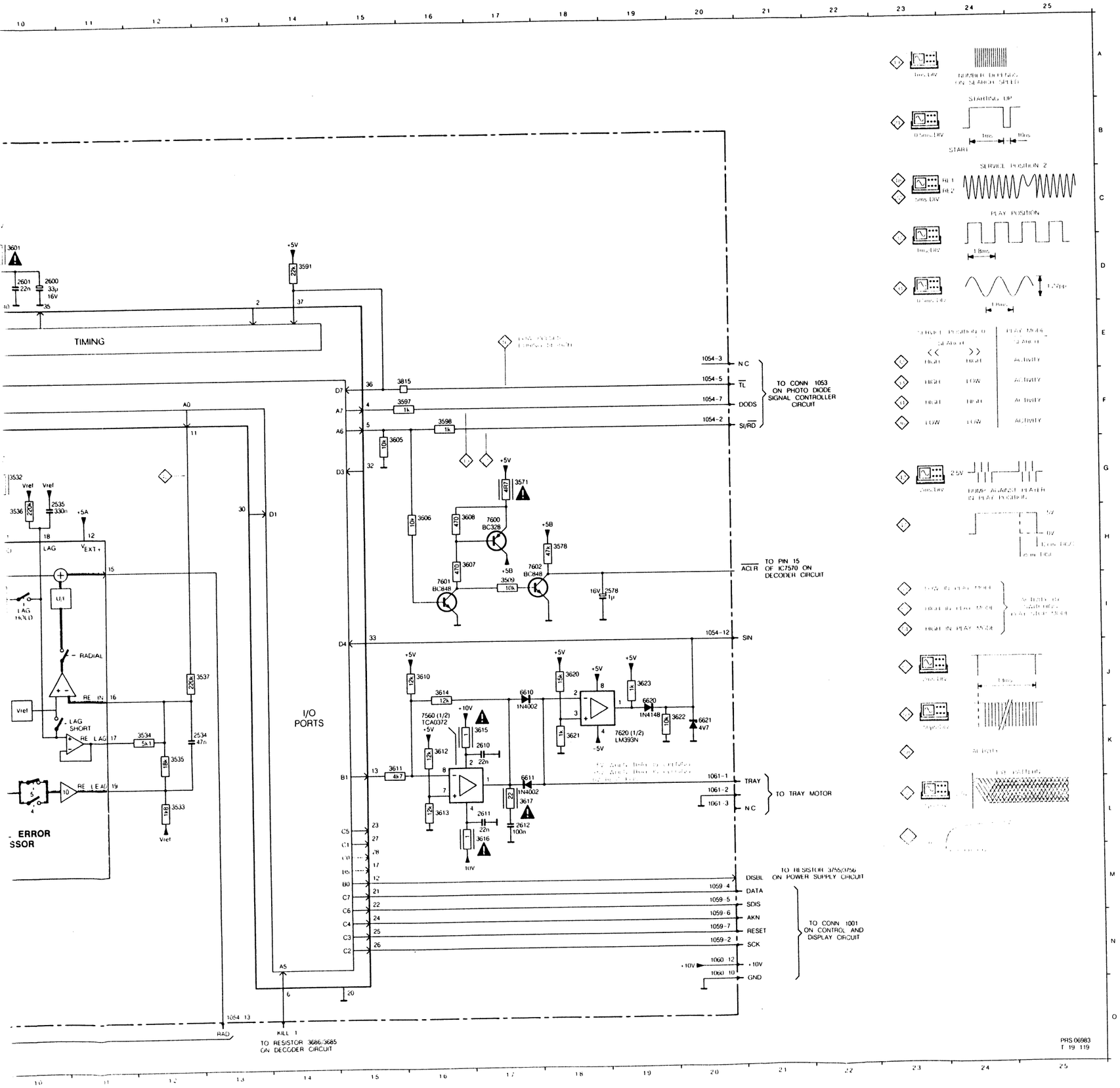

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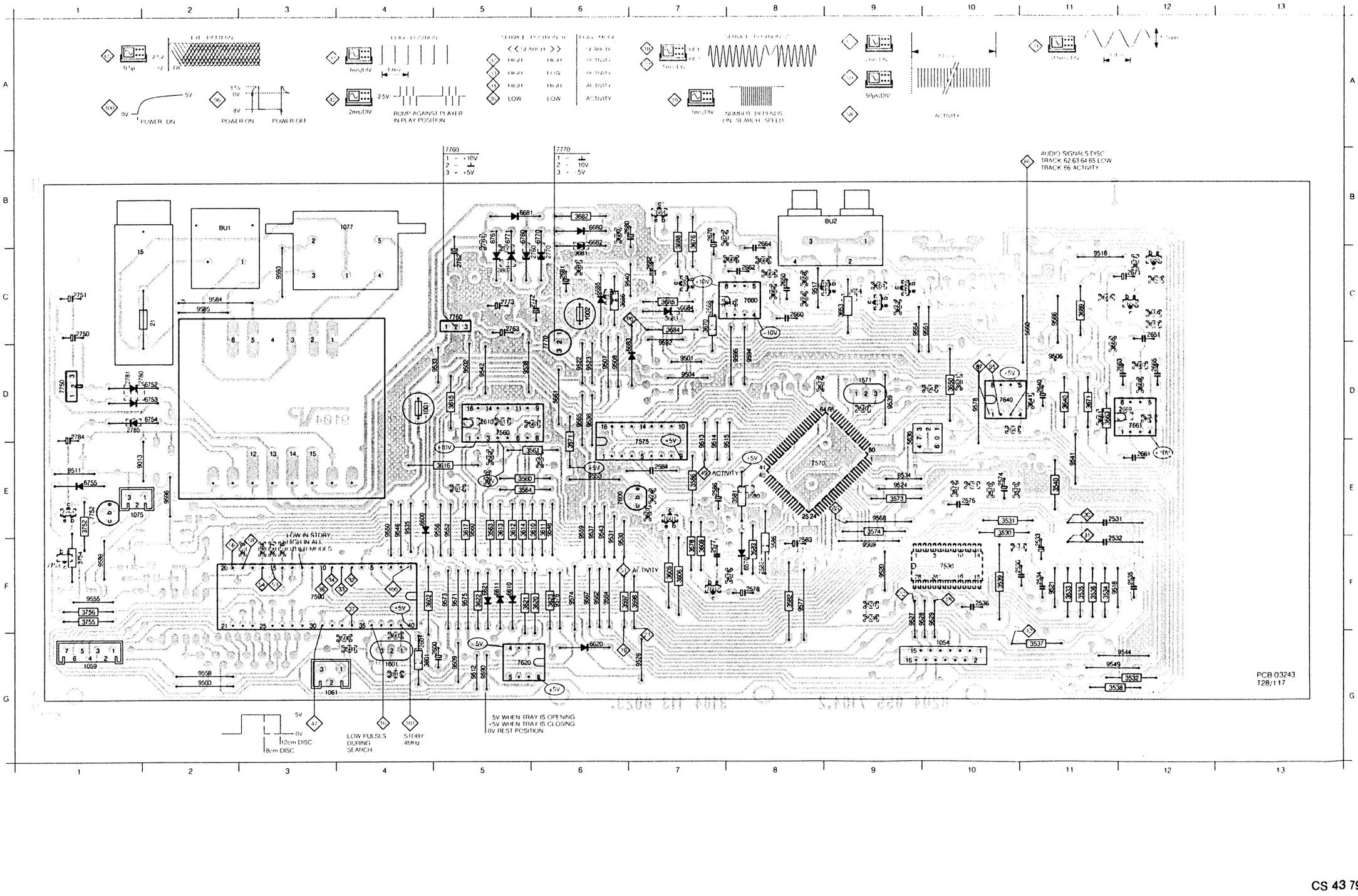
2530 G7
2531 G8
2532 G8
2533 M9
2534 K12
2535 G10
2536 M6
2537 M7
2538 M8
2554 G9
2560 M4
2561 N3
2562 O4
2578 I 18
2600 D10
2601 D10
2610 K17
2611 L17
2612 L17
2680 C6
2681 C7
3509 I 17
3530 G7
3531 G8
3532 G10
3533 L12
3534 K12
3535 K12
3536 G10
3537 J12
3538 G9
3539 G5
3540 J3
3560 N3
3561 N3
3562 M4
3563 N3
3564 N4
3571 G17
3576 C4
3577 C5
3578 H18
3579 C4
3582 C4
3584 C5
3590 J3
3591 D14
3597 F16
3598 F16
3601 D10
3602 D9
3603 D8
3605 F15
3606 H16
3607 H16
3608 H16
3610 J16
3611 K15
3612 K16
3613 L16
3614 J16
3615 K17
3616 L17
3617 L17
3620 J18
3621 K18
3622 K19
3623 J19
3680 C6
3681 C7
3815 F16
6600 C8
6610 J17
6611 K17
6620 J19
6621 K20
6680 B6
6681 B6
6682 C7
6685 C7
7560 K16
7560 N4
7570 H4
7590 D6
7600 H17
7601 I 16
7602 H17
7620 K19

12

SERVO & DECODER PANEL component side

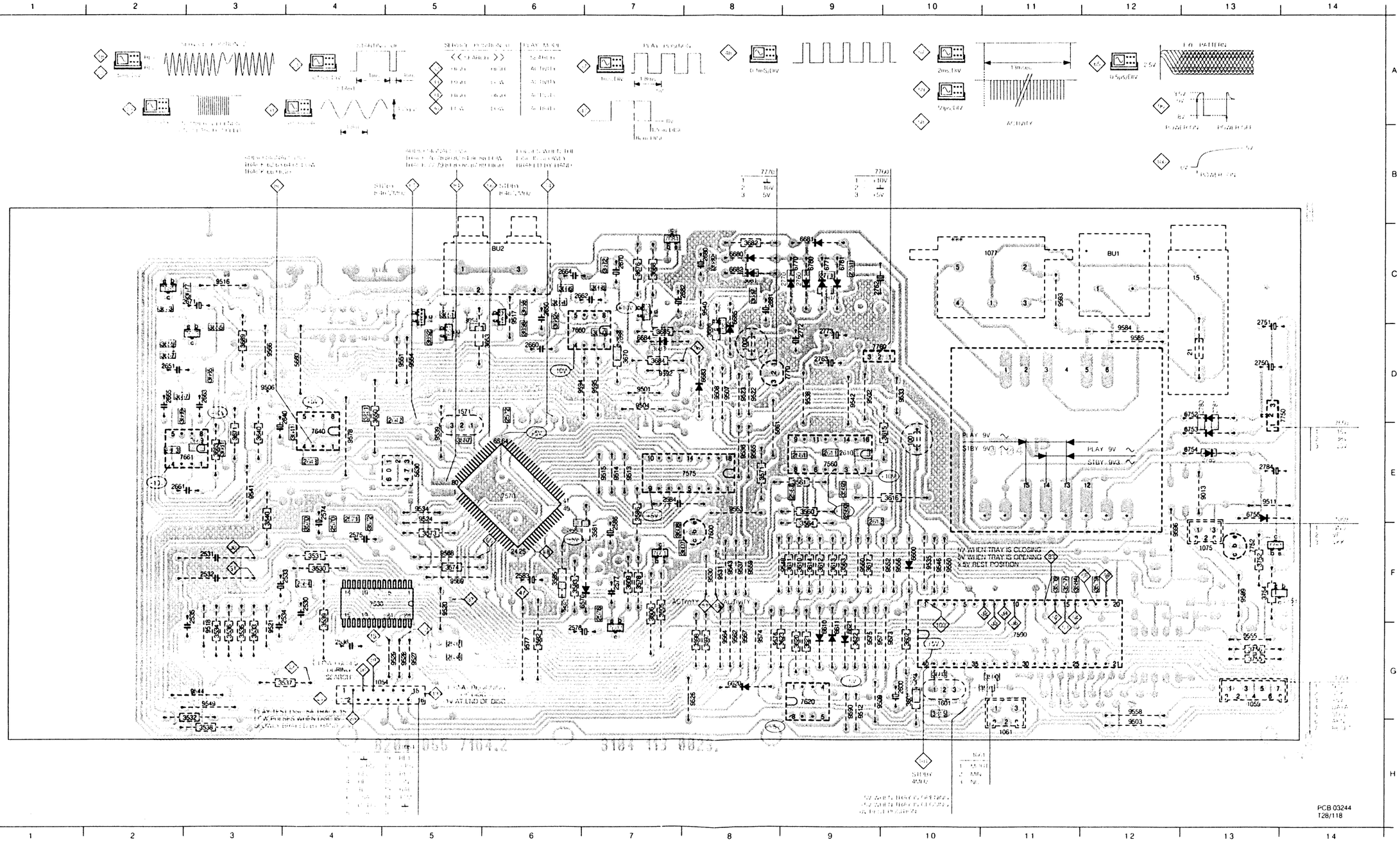
15 C1	2533 F11	2577 F7	2660 C8	2761 C5	3535 F11	3576 F3	3601 G4	3620 F6	3660 C7	3680 B6	3815 G4	6685 C6	7602 F7	7753 F1	9515 E8	9534 E9	9552 E5	9573 F5
21 C2	2534 F11	2578 F8	2661 E12	2762 C5	3536 F11	3577 F3	3602 F4	3621 F5	3661 D11	3681 C6	3821 D10	6752 D2	7620 G5	7760 C5	9516 C11	9535 E4	9553 E6	9574 F6
BU1 B2	2535 F12	2582 F8	2662 C8	2763 C5	3537 G11	3578 F7	3603 G4	3622 F5	3662 C8	3682 B6	5630 E9	6753 D2	7640 D10	7770 D6	9517 C8	9536 D6	9554 C9	9575 F5
BU2 B9	2536 F10	2583 F8	2663 D12	2770 C6	3538 G11	3579 F3	3605 F7	3623 F6	3663 D11	3683 C7	5660 C11	6754 D2	7650 C9	9013 E1	9518 F11	9537 F6	9555 F1	9576 F6
1001 D4	2537 F9	2584 E7	2664 C8	2771 C5	3539 F10	3580 E8	3606 F7	3640 D11	3664 C8	3684 C7	5661 D6	6755 E1	7651 C9	9501 D7	9520 F9	9538 D5	9556 E5	9577 F8
1002 C6	2538 F9	2586 E7	2665 D12	2772 C6	3540 E11	3581 E8	3607 E7	3641 D11	3665 D11	3685 C7	6570 F8	6760 B5	7652 C9	9502 D5	9521 F11	9539 D9	9558 G2	9578 D10
1054 G10	2554 F10	2600 G5	2668 C7	2773 C5	3560 E5	3582 F8	3608 E7	3650 D10	3666 C8	3686 C6	6600 E4	6761 B5	7653 C12	9503 G2	9522 D6	9540 C7	9559 F6	9584 C2
1059 G1	2560 E5	2601 G4	2669 D12	2780 D2	3561 E5	3583 F8	3609 F7	3651 C9	3667 D12	3687 C6	6610 F5	6770 B6	7660 C8	9504 D7	9523 D6	9541 E11	9560 E5	9585 C2
1061 G3	2561 D5	2610 D5	2670 B7	2781 D1	3562 E5	3584 F3	3610 E6	3652 C9	3668 C7	3688 C7	6611 F5	6771 B5	7661 D12	9506 D11	9524 E9	9542 D5	9562 F6	9589 F1
1075 E1	2562 E6	2611 D5	2671 C12	2784 D1	3563 E5	3585 F8	3611 E6	3653 C9	3669 D12	3689 C11	6620 G6	7530 F10	7680 C7	9507 D6	9526 G7	9543 F6	9564 F6	9590 G5
1077 B4	2570 E10	2612 E5	2680 B6	2785 D1	3564 E5	3586 E7	3612 E5	3654 C9	3670 C7	3752 E1	6621 F5	7560 D5	7681 C6	9508 D6	9527 F9	9544 G11	9565 D6	9592 D7
1571 D9	2571 E10	2640 D11	2681 C6	3530 E10	3570 E10	3587 D9	3613 E5	3655 C11	3671 D11	3754 F1	6680 B6	7570 E8	7684 B7	9509 G5	9528 F10	9546 E4	9566 C11	9593 C3
1601 G4	2572 D8	2642 D10	2682 C7	3531 E10	3571 E6	3590 G4	3614 E5	3656 C8	3672 B8	3755 F1	6681 B5	7575 E7	7685 C12	9511 E1	9529 F10	9548 E6	9567 F6	9594 D8
2530 F10	2574 E10	2643 D10	2750 C1	3532 G12	3572 E10	3591 G4	3615 D5	3657 C12	3673 C12	3756 F1	6682 B6	7590 F3	7750 D1	9512 G5	9530 F6	9549 G11	9568 E9	9595 D8
2531 E11	2575 E10	2650 C8	2751 C1	3533 F11	3573 E9	3597 F6	3616 E5	3658 C8	3676 C7	3803 D12	6683 D7	7600 E6	7751 E1	9513 E7	9531 F6	9550 E4	9569 F9	9596 E2
2532 F11	2576 F8	2651 C12	2760 C6	3534 F11	3574 E9	3598 F7	3617 E5	3659 C12	3677 C12	3807 C5	6684 C7	7601 E7	7752 E1	9514 E7	9533 D5	9551 C10	9571 F5	



13

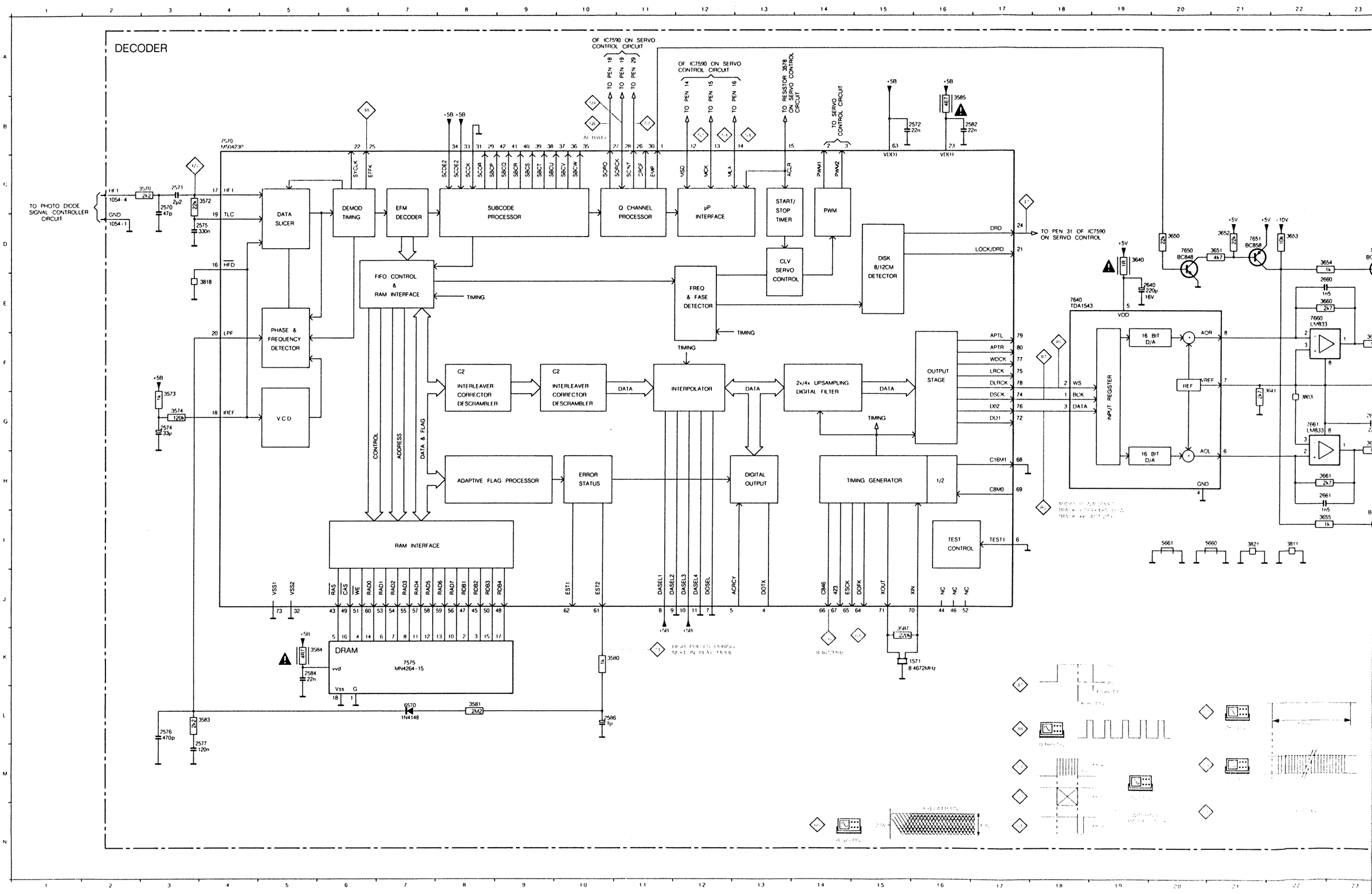
SERVO & DECODER PANEL solder side

15 C13	2532 F3	2575 F4	2643 E4	2682 C8	3530 F4	3564 F9	3585 F6	3610 F9	3651 C5	3666 C6	3685 D7	5661 E8	6754 E13	7640 E4	7760 D9	9515 E7	9533 D10	9550 F10	9568 F5	9594 D6	
21 D13	2533 F4	2576 F7	2650 C6	2750 D13	3531 F4	3570 F4	3586 E7	3611 F9	3652 D5	3667 D2	3686 D8	6570 F7	6755 E13	7650 D5	7770 D9	9516 C3	9534 E5	9551 D5	9569 F5	9595 D7	
BU1 C12	2534 G4	2577 F7	2651 D2	2751 D13	3532 H2	3571 E8	3587 E5	3612 F9	3653 D6	3668 C7	3687 C8	6600 F10	6760 C9	7651 D5	9013 E13	9517 D6	9535 F10	9552 F10	9571 G10	9596 F12	
BU2 C6	2535 G3	2578 G6	2660 D6	2760 C9	3533 G3	3572 F4	3590 G11	3613 F9	3654 C5	3669 E2	3688 C7	6610 G9	6761 C9	7652 D6	9501 D7	9518 G3	9536 E8	9553 E8	9573 G10		
1001 E10	2536 G4	2582 F6	2661 E2	2761 C9	3534 G3	3573 F5	3591 G10	3614 F9	3655 D3	3670 D7	3689 D3	6611 G9	6770 C9	7653 D3	9502 D9	9520 F5	9537 F8	9554 D5	9574 G8		
1002 D8	2537 G5	2583 F6	2662 C6	2762 C9	3535 G3	3574 F5	3597 G8	3615 E10	3656 D6	3671 E3	3752 F13	6620 G8	6771 C9	7660 D6	9503 H12	9521 G3	9538 D9	9555 G13	9575 G9		
1054 G4	2538 G5	2584 E7	2663 D3	2763 D9	3536 G3	3576 F11	3598 G8	3616 E10	3657 D2	3672 C7	3754 F13	6621 G9	7530 F4	7661 E2	9504 D7	9522 D8	9539 E5	9556 F10	9576 G8		
1059 G13	2554 F4	2586 F7	2664 C6	2770 C9	3537 G3	3577 F11	3601 G10	3617 F9	3658 C6	3673 C2	3755 G13	6680 C8	7560 E9	7680 C7	9506 D3	9523 D8	9540 C8	9558 G12	9577 G6		
1061 H11	2560 E9	2600 G10	2665 D2	2771 C9	3538 H3	3578 F7	3602 G10	3620 G9	3659 D2	3676 C7	3756 G13	6681 C9	7570 E6	7681 D8	9507 D8	9524 E5	9541 E3	9559 F8	9578 E4		
1075 F13	2561 E9	2601 G10	2668 D7	2772 D9	3539 G4	3579 F12	3603 G10	3621 G9	3660 D7	3677 C3	3803 E2	6682 C8	7575 E7	7684 C7	9508 D8	9526 G8	9542 D9	9560 F9	9584 D12		
1077 C11	2562 E9	2610 E9	2669 E3	2773 D9	3540 F3	3580 F6	3605 F7	3622 G9	3661 E3	3680 C8	3807 C9	6683 D8	7590 G11	7685 C2	9509 G10	9527 G5	9543 F8	9562 G8	9585 D12		
1571 D5	2570 F4	2611 E9	2670 C7	2780 D13	3560 E9	3581 F7	3606 F7	3623 G9	3662 D6	3681 C8	3815 G10	6684 D7	7600 F8	7750 D14	9511 E13	9528 G5	9544 G3	9564 G8	9589 F13		
1601 G10	2571 E4	2612 F9	2671 C2	2781 D13	3561 E9	3582 G6	3607 F8	3640 E3	3663 E3	3682 C8	3821 D4	6685 D8	7601 F7	7751 F13	9512 G9	9529 G5	9546 F10	9565 E8	9590 G9		
2530 F4	2572 D6	2640 E4	2680 C8	2784 E13	3562 E9	3583 F6	3608 F7	3641 E4	3664 C6	3683 D7	5630 E5	6752 D13	7602 G7	7752 F13	9513 E7	9530 F8	9548 F9	9566 D3	9592 D7		
2531 F3	2574 E4	2642 E5	2681 C8	2785 E13	3563 F9	3584 F11	3609 F7	3650 E4	3665 D3	3684 D7	5660 D4	6753 E13	7620 G9	7753 F14	9514 E7	9531 F8	9549 G3	9567 G8	9593 C11		



14

DECODER


DECODER
TO PHOTO DIODE SIGNAL CONTROLLER CIRCUIT
DATA SLICER
DEMOD TIMING
EFM DECODER
SUBCODE PROCESSOR
Q CHANNEL PROCESSOR
µP INTERFACE
START/ STOP TIMER
PWM
CLV SERVO CONTROL
DISK 8/12CM DETECTOR
FIFO CONTROL & RAM INTERFACE
FREQ & FASE DETECTOR
PHASE & FREQUENCY DETECTOR
VCD
C2 INTERLEAVER CORRECTOR DESCRAMBLER
INTERPOLATOR
2x/4x UPSAMPLING DIGITAL FILTER
OUTPUT STAGE
ADAPTIVE FLAG PROCESSOR
ERROR STATUS
DIGITAL OUTPUT
TIMING GENERATOR
TEST CONTROL
RAM INTERFACE
DRAM
7575 MN4264-15
7640 TDA1543
INPUT REGISTER
16 BIT D/A
TO PEN 31 OF IC7590 ON SERVO CONTROL
OF IC7590 ON SERVO CONTROL CIRCUIT
TO RESISTOR 3578 ON SERVO CONTROL CIRCUIT
TO SERVO CONTROL CIRCUIT
1571 8.4672MHz

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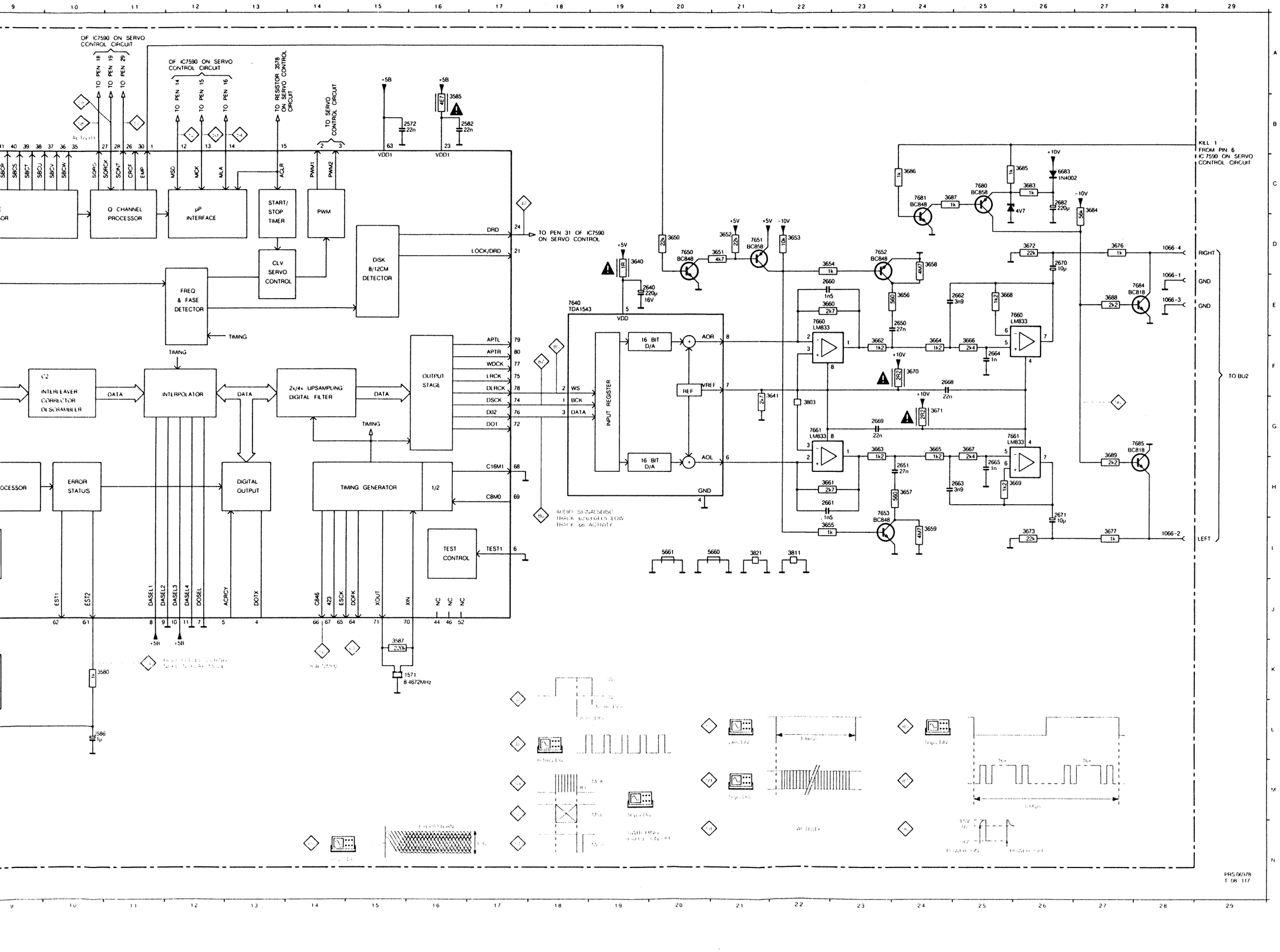

1571 K15
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2571 C3
2572 B15
2574 G3
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2576 L3
2577 M3
2582 B16
2584 K5
2586 L10
2640 E19
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2661 H22
2662 E24
2663 H24
2664 F25
2665 H25
2668 F24
2669 G23
2670 D26
2671 I 26
2682 C26
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3574 G3
3580 K10
3581 L8
3583 L3
3584 K5
3585 B16
3587 K15
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3650 D20
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3652 D21
3653 D22
3654 D22
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3676 D27
3677 I 27
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3684 C27
3685 C26
3686 C24
3687 C24
3688 E27
3689 H27
3803 G22
3811 I 22
3818 E4
3821 I 21
5660 I 21
5661 I 20
6570 L7
6683 C26
7570 B4
7575 K7
7640 E18
7650 D20
7651 D21
7652 D23
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7661 G22
7661 G25
7680 C25
7681 C24
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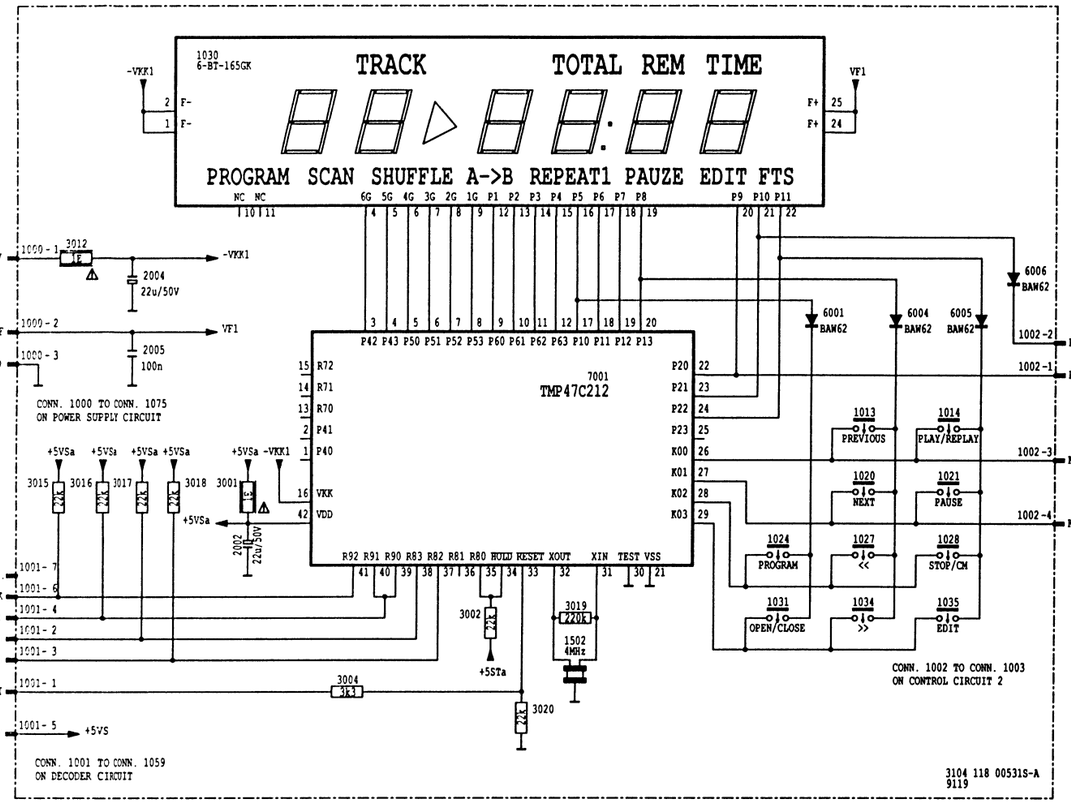
7685 G28

CONTROL & DISPLAY



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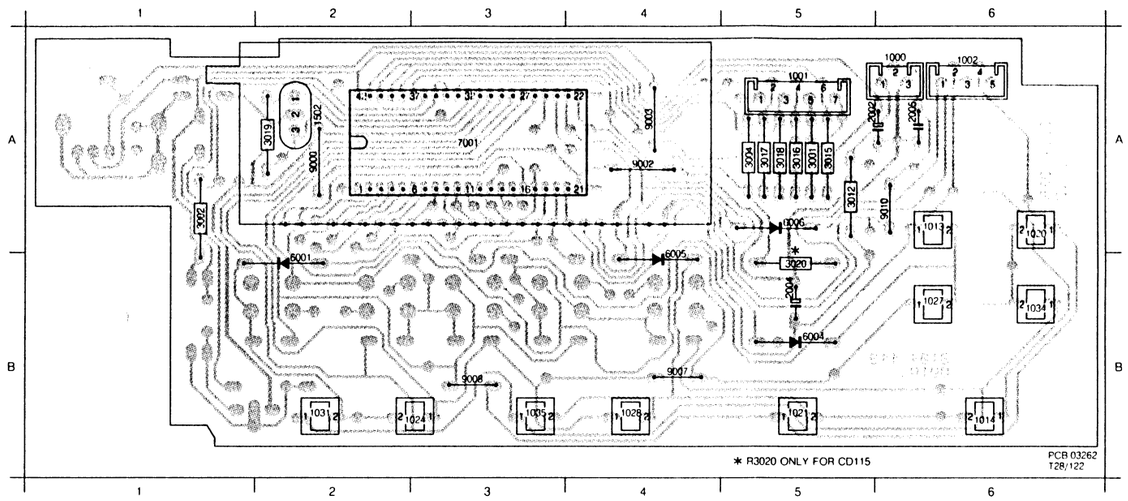
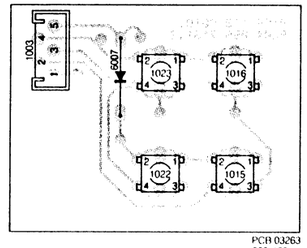
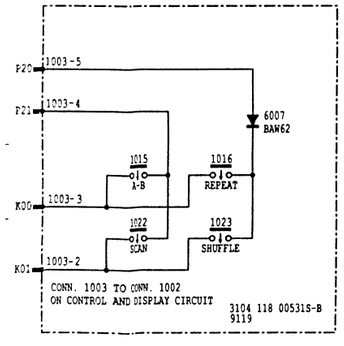
1031 B2 1034 B6 1035 B3 1502 A2 2002 A5
2004 B5 2005 A6 3001 A5 3002 A1 3004 A5
3012 A5 3015 A5 3016 A5 3017 A5 3018 A5
3019 A2 3020 B5 6001 B2 6004 B5 6005 B4
6006 A5 7001 A3 9000 A2 9002 A4 9003 A4
9007 B4 9008 B3 9010 A6

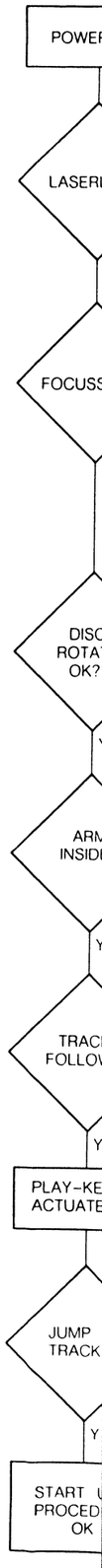




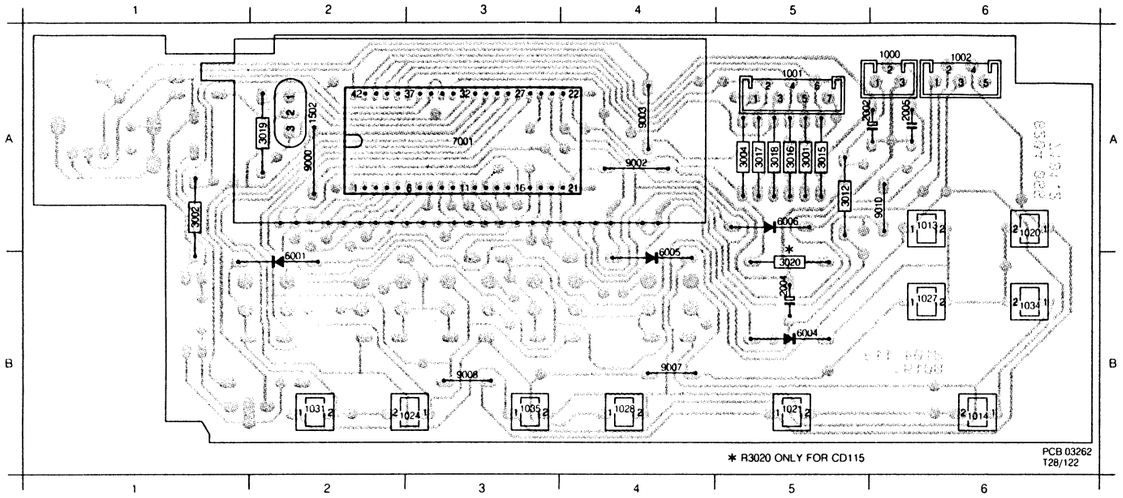
CONTROL 2

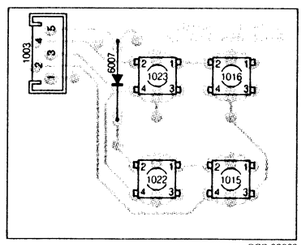


START UP PROCEDURE

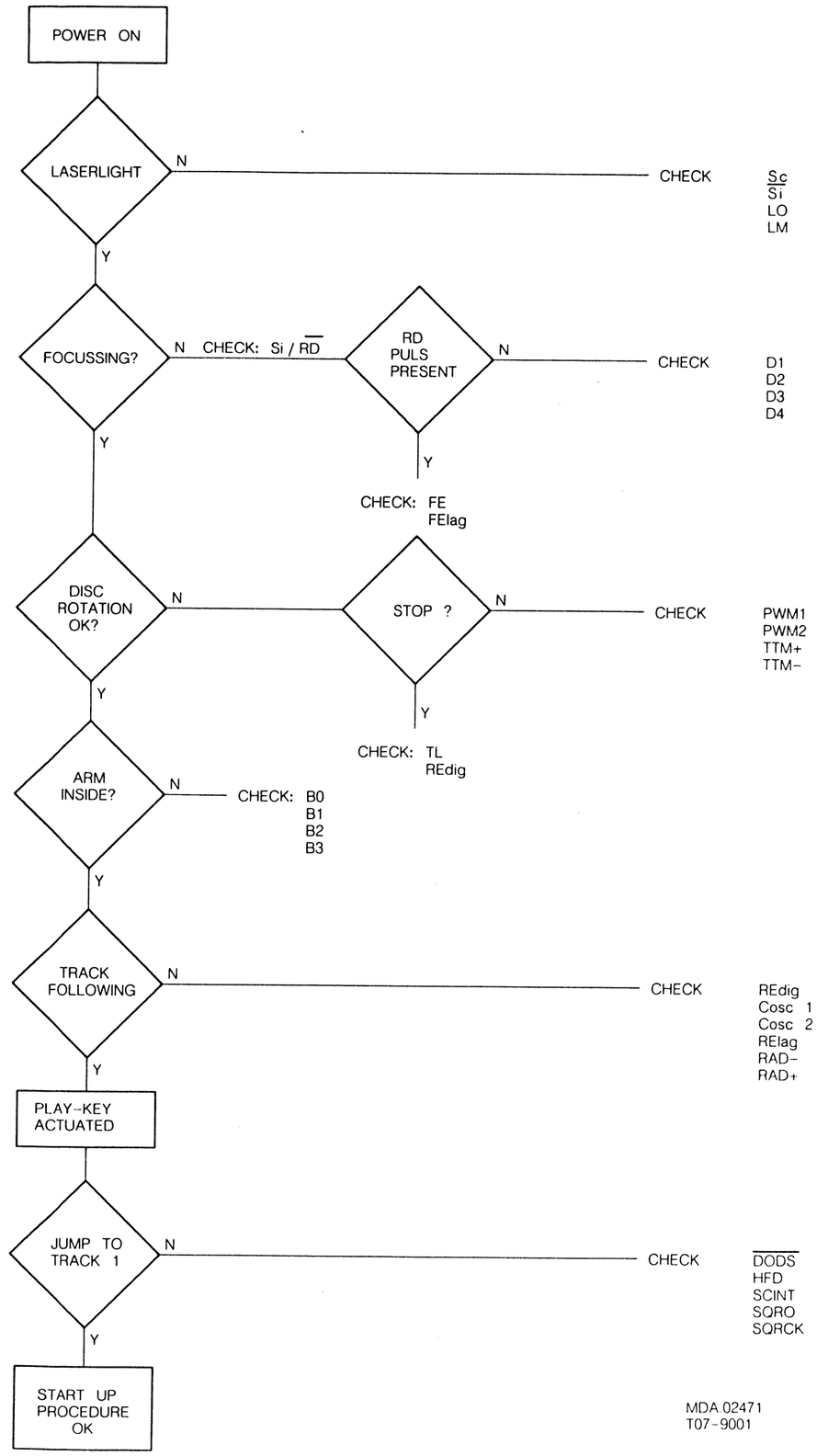


1000 A6 1001 A5 1002 A6 1013 A6 1014 B6
1020 A6 1021 B5 1024 B2 1027 B6 1028 B4
1031 B2 1034 B6 1035 B3 1502 A2 2002 A5
2004 B5 2005 A6 3001 A5 3002 A1 3004 A5
3012 A5 3015 A5 3016 A5 3017 A5 3018 A5
3019 A2 3020 B5 6001 B2 6004 B5 6005 B4
6006 A5 7001 A3 9000 A2 9002 A4 9003 A4
9007 B4 9008 B3 9010 A6

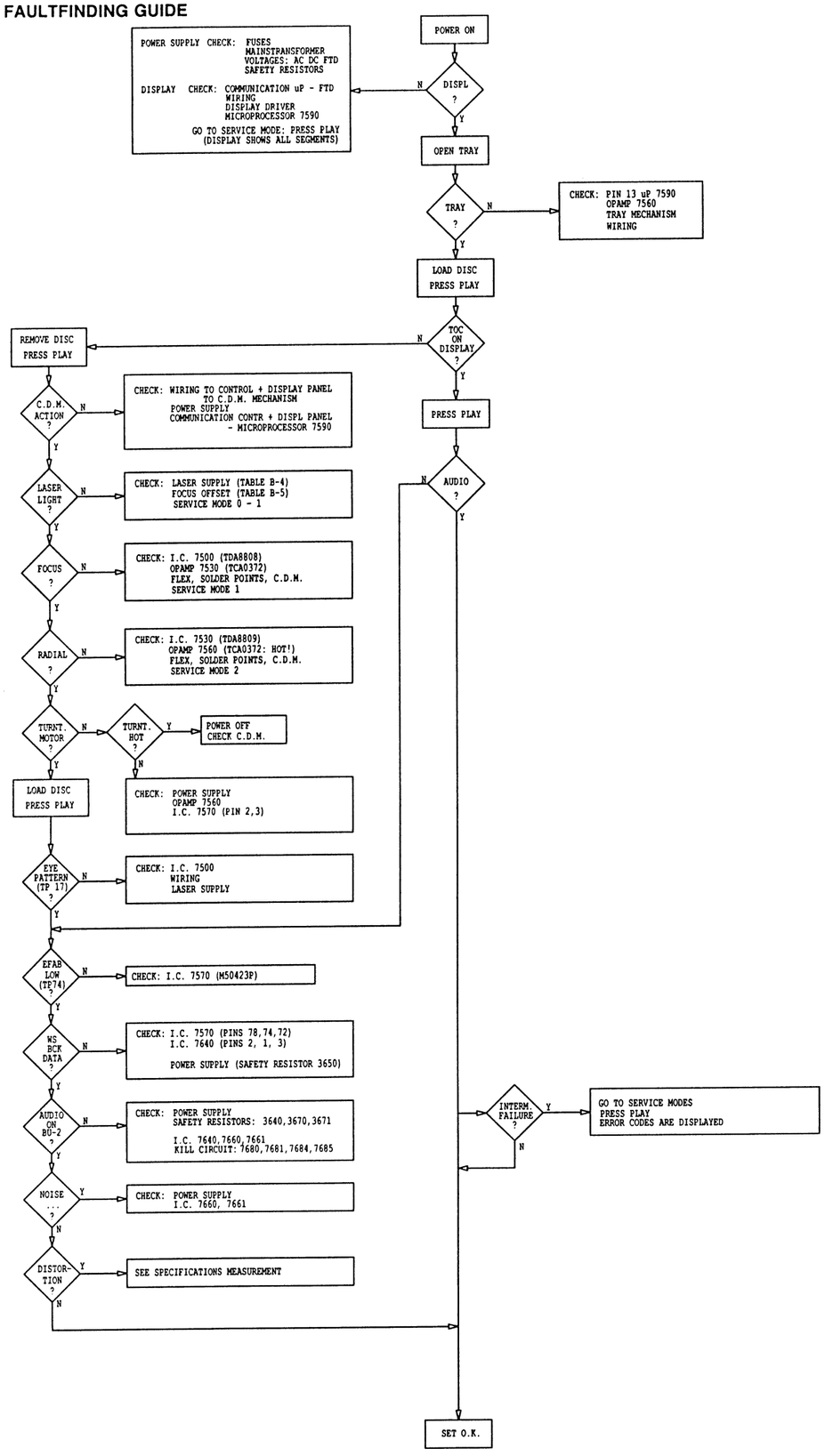




START UP PROCEDURE

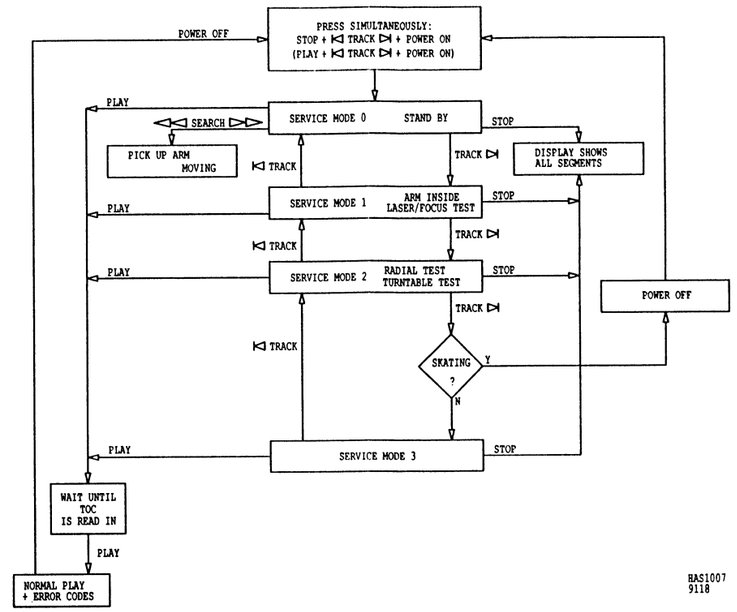


FAULTFINDING GUIDE



HAS1006
9118

SERVICE TESTPROGRAM



HAS1007
9118

ERROR CODE TABLE

SYSTEM ERRORS

ERROR 01 Tray error
ERROR 02 Focus error
ERROR 03 Radial error
ERROR 04 Disc error : DRD becomes not low
ERROR 05 TL low to long
ERROR 06 Jump error
ERROR 07 Subcode error
ERROR 08 TOC error

OPERATING ERRORS

ERROR 09 FF/FR pressed in scan
ERROR 31 Search time out error
ERROR 32 Binary search time out error
ERROR 33 Index not found
ERROR 34 Relative time not found
ERROR 36 Programmed track is not existing on this CD
ERROR 37 Selected track is not existing on this CD
ERROR 38 Next at a border when repeat is off
ERROR 39 Previous at a border when repeat is off
ERROR 40 Finding error
ERROR 41 Review error
ERROR 42 Program memory full
ERROR 47 A-B pressed while not in play
ERROR 48 A-B pressed in scan
ERROR 49 Edit pressed in play mode

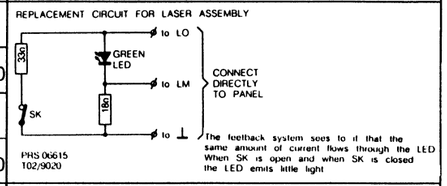
B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	∅	▭	⊓	Remarks
1	D2 D1 D3 D4	power on	④ ⊓ ⑥ ⊓ ⑦ ⊓ ⑧ ⊓	–	–	signal 4≡6≡7≡8	Signal depends on Distance lens ↔ IR LED of remote control

T-23366A

B-4 CHECK OF LASER SUPPLY

The laser, the lasersupply plus the monitor diode form a feedback system.
A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete C.D.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with teh replacement circuit for laser assembly.

Step	Signal	Mode	◇	▭	Remarks
1	LO	serv. pos. 2 SK	⑨ Ⓥ ⊥	1.8<V <2.3	
	LM		⑪ Ⓥ ⊥	170<mV <220	
2	LO	serv. pos. 2 SK	⑨ Ⓥ ⊥	1.8<V <2.3	
	LM		⑪ Ⓥ ⊥	170<mV <220	
3	LO	Power on	⑨ Ⓥ ⊥	0V ± 0.2V	No light

REPLACEMENT CIRCUIT FOR LASER ASSEMBLY
to LO
GREEN LED
330
to LM
CONNECT DIRECTLY TO PANEL
SK
180
to ⊥
PRS 00615 102/9020
The feedback system sees to it that the same amount of current flows through the LED When SK is open and when SK is closed the LED emits little light

T-23366B

After opening SK, the led will emit more light for a short moment.

B-4 LASER CURRENT ADJUSTMENT

Step	Signal	Mode	◇	∅	▭	⊓	Remarks
1	–	Power off	–	–	–	–	Check if FLEX-FOIL is properly connected
2	–	Power off	⑪ Ω ⊥	R3555	1kΩ +10% −0	–	Pre-adjustment Ohmic value
3	–	Power off	–	R3515	–	–	Set to mid-position
4	laser current ≙ voltage across R3500	Test disc 5A play	① Ⓥ ② mV DC	–	⩾ 15mV	–	If < 15mV then go to step 3 and set R3515 to 1/4 or 3/4. Try again.
5	laser current ≙ voltage across R3500	Test disc 5A play	① Ⓥ ② mV DC	R3555	50mV	–	–
6	FE-LAG	Test disc 5A track 1 play	㉗ Ⓥ ⊥	R3515	400mV	–	Fine adjustment

T-23366C

B-5 ADJUSTMENT OF FOCUS-OFFSET

Step	Signal	Mode	◇	∅	▭	⊓	Remarks
1	–	Power on no disc	–	R3515	–	–	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5 Track 1	27	R3515	400mV ± 40 mV DC	–	fine adjustment

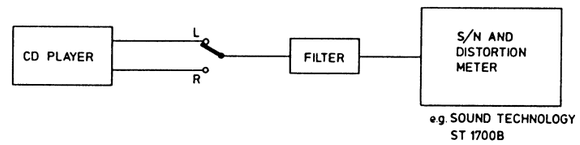
T-23366D

D-6 SPECIFICATIONS MEASUREMENT

Signal	Mode	◇	▭	⊓	Remarks
BU2-L	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12

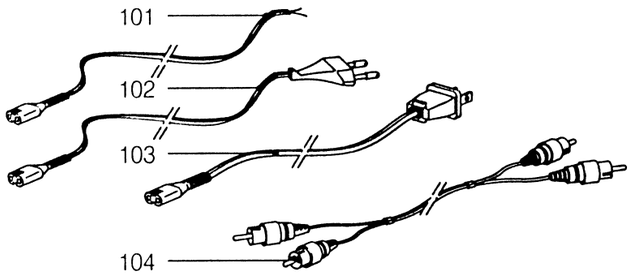
T-23366M

Filter = 13th order filter 4822 395 30204



30 459 A12

EXPLODED VIEW



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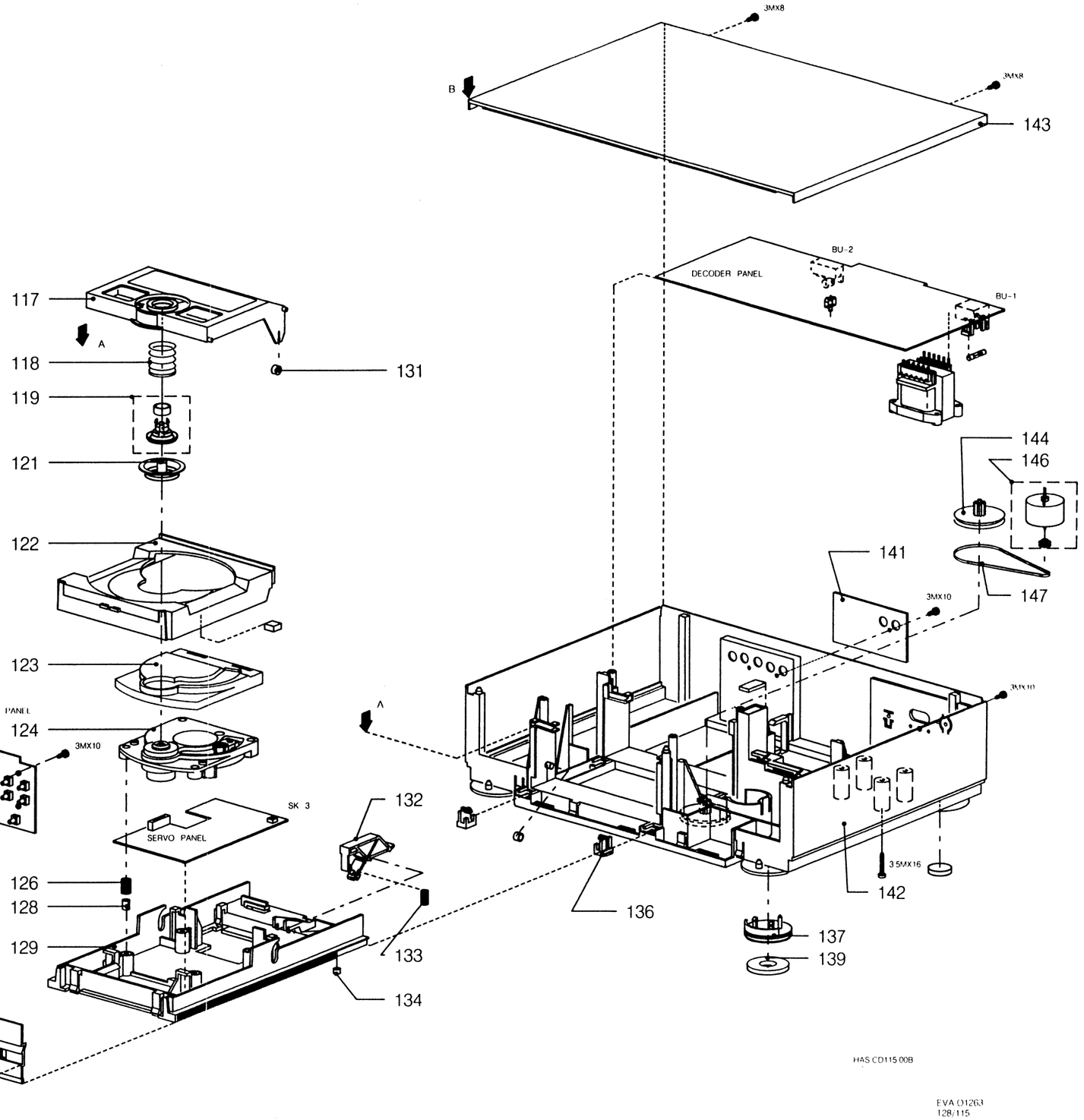

HAS CD115 00B

EVA 01263
128/115

MEC

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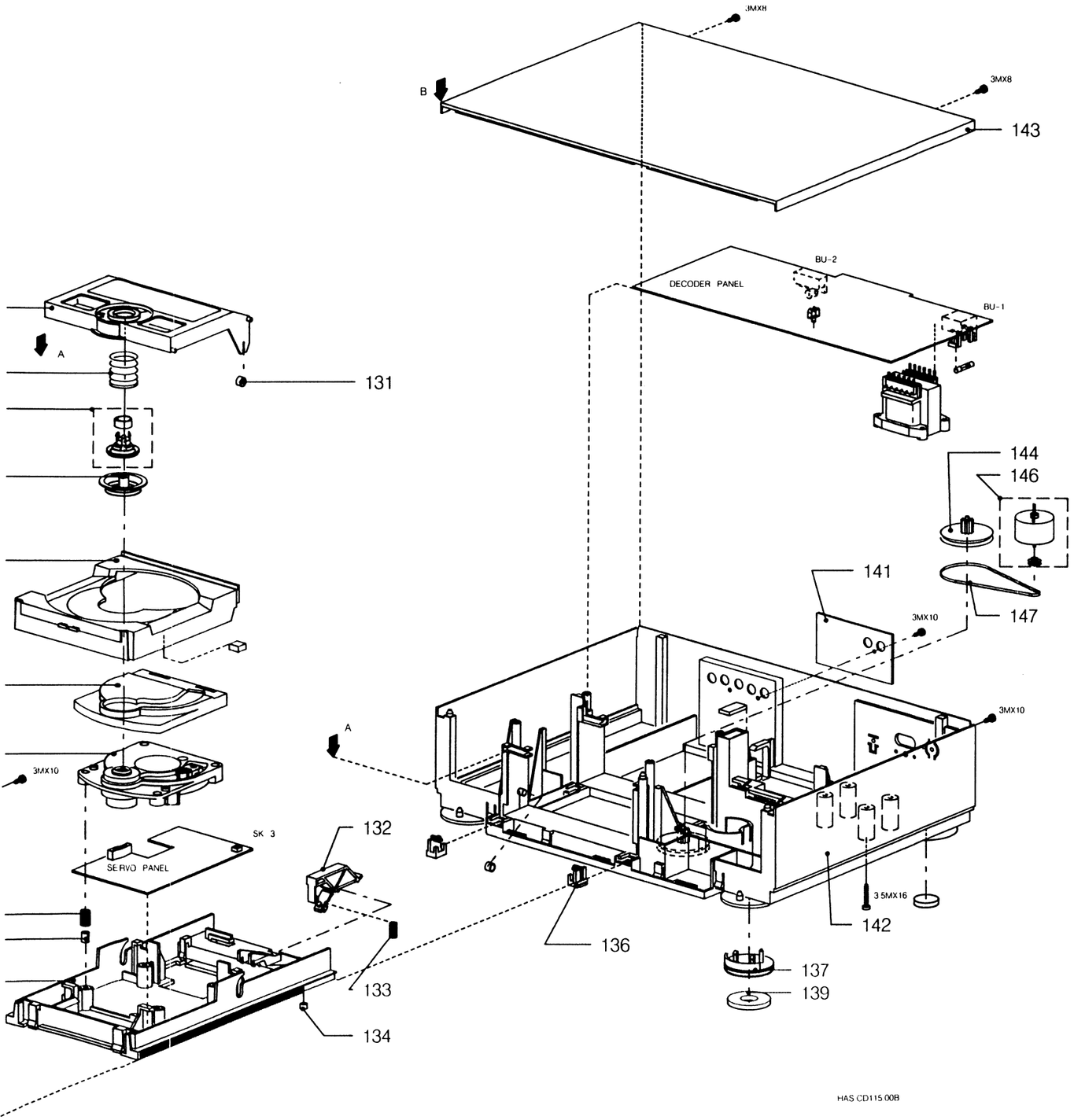

HAS CD115.00B

EVA O1263
T28/115

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MECHANICAL PARTSLIST

101	4822 321 10719	
102	4822 321 10249	SBC1201
104	4822 321 22832	SBC1072
106	4822 410 61333	
107	4822 459 10887	
108	4822 454 12739	
109	4822 381 11256	
112	4822 410 61334	
113	4822 444 40456	
114	4822 444 40457	
116	4822 454 30449	
117	4822 466 92841	
118	4822 492 52159	
119	4822 535 93054	
121	4822 492 33145	
122	4822 444 60681	
123	4822 454 30438	
124	4822 691 30209	
126	4822 492 51902	
128	4822 466 61587	
129	4822 444 50628	
131	4822 528 90639	
132	4822 402 61322	
133	4822 492 52123	
134	4822 532 51756	
136	4822 402 61323	
137	4822 462 41829	
139	4822 462 41783	
141	4822 444 60679	
142	4822 464 50846	
143	4822 444 60678	
144	4822 528 81329	
146	4822 361 21258	
147	4822 358 10115	
	4822 321 61026	16P FLEXFOIL

DECODER PANEL

Miscellaneous

21	4822 256 30274	FUSE HOLDER
BU1	4822 265 20291	MAINSINLET
BU2	4822 267 31171	

Crystal

1571	4822 242 73557	4,00 MHz
1601	4822 242 72527	4,00 MHz CERAMIC

Capacitors

2530	4822 121 42408	220nF 5% 63V
2531	4822 121 51321	8,2µF 1% 63V
2532	4822 121 51321	8,2µF 1% 63V
2533	4822 124 40272	33µF 20% 16V
2534	4822 121 43526	47nF 5% 100V
2535	5322 121 42661	330nF 5% 63V
2536	4822 121 42408	220nF 5% 63V
2537	4822 122 33342	33nF 10% 63V
2538	4822 122 33342	33nF 10% 63V
2560	5322 122 31866	6,8nF 10% 63V
2561	5322 122 31866	6,8nF 10% 63V
2562	4822 122 33496	100nF 10% 63V
2570	5322 122 32452	47pF 5% 50V
2571	4822 122 33175	2,2nF 20% 50V
2572	4822 122 33809	22nF 20% 50V
2574	4822 124 40272	33µF 20% 16V
2575	5322 121 42661	330nF 5% 63V
2576	5322 122 32268	470pF 10% 50V
2577	4822 121 43396	120nF 5% 63V
2578	4822 124 40242	1µF 20% 63V
2582	4822 122 33809	22nF 20% 50V
2583	4822 124 40272	33µF 20% 16V
2584	4822 122 10166	22nF 30% 16V
2586	4822 124 40242	1µF 20% 63V
2600	4822 124 40272	33µF 20% 16V
2601	4822 122 33809	22nF 20% 50V
2610	4822 122 33496	100nF 10% 63V
2611	4822 122 33496	100nF 10% 63V
2612	4822 122 33496	100nF 10% 63V
2640	4822 124 40196	220µF 20% 16V
2642	4822 122 33105	56nF 10% 63V
2643	4822 122 33496	100nF 10% 63V
2650	4822 121 43873	27nF 5% 50V
2651	4822 121 43873	27nF 5% 50V
2660	4822 121 43868	1,5nF 5% 50V
2661	4822 121 43868	1,5nF 5% 50V
2662	5322 121 42927	3,9nF 5% 250V
2663	5322 121 42927	3,9nF 5% 250V
2664	4822 121 43897	1nF 5% 50V
2665	4822 121 43897	1nF 5% 50V
2668	4822 122 33809	22nF 20% 50V
2669	4822 122 33809	22nF 20% 50V
2670	4822 124 40435	10µF 20% 50V
2671	4822 124 40435	10µF 20% 50V
2680	4822 124 40272	33µF 20% 16V
2681	4822 124 40272	33µF 20% 16V
2682	4822 124 40196	220µF 20% 16V
2750	5322 124 22094	220µF 20% 50V
2751	4822 124 41596	22µF 20% 50V
2760	4822 122 33809	22nF 20% 50V
2761	4822 122 33809	22nF 20% 50V
2762	4822 124 23268	3300µF 20% 16V
2763	4822 124 40272	33µF 20% 16V
2770	4822 122 33809	22nF 20% 50V
2771	4822 122 33809	22nF 20% 50V
2772	4822 124 41853	1000µF 20% 16V
2773	4822 124 40272	33µF 20% 16V
2780	4822 122 33809	22nF 20% 50V
2781	4822 122 33809	22nF 20% 50V
2784	4822 124 41853	1000µF 20% 16V
2785	4822 122 33809	22nF 20% 50V

Resistors

3507	4822 051 20103	10k 5% 0,1W
3530	4822 050 24703	47k 1% 0,6W
3531	4822 050 21503	15k 1% 0,6W
3532	4822 052 10108	1R 5% 0,33W
3533	4822 050 21802	1k8 1% 0,6W
3534	4822 050 25102	5k1 1% 0,6W
3535	4822 050 21803	18k 1% 0,6W
3536	4822 050 22204	220k 1% 0,6W
3537	4822 050 22204	220k 1% 0,6W
3538	4822 052 10478	4R7 5% 0,33W
3539	4822 050 21273	12k7 1% 0,6W
3540	4822 050 22203	22k 1% 0,6W
3560	4822 116 52234	100k 5% 0,5W
3561	4822 116 52234	100k 5% 0,5W
3562	4822 051 20104	100k 5% 0,1W
3563	4822 116 52234	100k 5% 0,5W
3564	4822 052 10229	22R 5% 0,33W
3570	4822 051 20222	2k2 5% 0,1W
3571	4822 052 10478	4R7 5% 0,33W
3572	4822 051 20223	22k 5% 0,1W
3573	4822 050 21002	1k 1% 0,6W
3574	4822 050 21204	120k 1% 0,6W
3576	4822 051 20103	10k 5% 0,1W
3577	4822 051 20103	10k 5% 0,1W
3578	4822 050 24703	47k 1% 0,6W
3579	4822 051 20103	10k 5% 0,1W
3580	4822 051 10102	1k 2% 0,25W
3581	4822 050 22205	2M2 5% 0,1W
3582	4822 050 21003	10k 1% 0,6W
3583	4822 050 22202	2k2 1% 0,6W
3584	4822 051 20103	10k 5% 0,1W
3585	4822 052 10478	4R7 5% 0,33W
3586	4822 052 10478	4R7 5% 0,33W
3587	4822 051 20224	220k 5% 0,1W
3590	4822 051 20223	22k 5% 0,1W
3591	4822 051 20223	22k 5% 0,1W
3597	4822 050 21002	1k 1% 0,6W
3598	4822 050 21002	1k 1% 0,6W
3601	4822 052 10108	1R 5% 0,33W
3602	4822 050 22203	22k 1% 0,6W
3603	4822 051 20224	220k 5% 0,1W
3605	4822 050 21003	10k 5% 0,125W
3606	4822 050 21003	10k 5% 0,125W
3607	4822 051 20471	470R 5% 0,1W
3608	4822 051 20471	470R 5% 0,1W
3609	4822 050 22203	22k 5% 0,125W
3610	4822 050 21203	12k 1% 0,6W
3611	4822 050 24702	4k7 1% 0,6W
3612	4822 050 21203	12k 1% 0,6W
3613	4822 050 21203	12k 1% 0,6W
3614	4822 050 21203	12k 1% 0,6W
3615	4822 052 10228	2R2 5% 0,33W
3616	4822 052 10228	2R2 5% 0,33W
3617	4822 052 10229	22R 5% 0,33W
3620	4822 116 52244	15k 5% 0,5W
3621	4822 050 21002	1k 1% 0,6W
3622	4822 050 21003	10k 1% 0,6W
3623	4822 050 21002	1k 1% 0,6W

19

3640	4822 052 10108	1R 5% 0,33W
3641	4822 051 20272	2k7 5% 0,1W
3650	4822 050 22203	22k 1% 0,6W
3651	4822 051 20472	4k7 5% 0,1W
3652	4822 051 20223	22k 5% 0,1W
3653	4822 050 21003	10k 1% 0,6W
3654	4822 051 10102	1k 2% 0,25W
3655	4822 051 10102	1k 2% 0,25W
3656	4822 051 20561	560R 5% 0,1W
3657	4822 051 20561	560R 5% 0,1W
3658	4822 051 20475	4M7 5% 0,1W
3659	4822 051 20475	4M7 5% 0,1W
3660	4822 051 20272	2k7 5% 0,1W
3661	4822 051 20272	2k7 5% 0,1W
3662	4822 051 20122	1k2 5% 0,1W
3663	4822 051 10122	1k2 2% 0,25W
3664	4822 051 20122	1k2 5% 0,1W
3665	4822 051 20122	1k2 5% 0,1W
3666	4822 051 20242	2k4 5% 0,1W
3667	4822 051 20242	2k4 5% 0,1W
3668	4822 051 20122	1k2 5% 0,1W
3669	4822 051 20122	1k2 5% 0,1W
3670	4822 052 10228	2R2 5% 0,33W
3671	4822 052 10228	2R2 5% 0,33W
3672	4822 051 20223	22k 5% 0,1W
3673	4822 051 20223	22k 5% 0,1W
3676	4822 050 21002	1k 1% 0,6W
3677	4822 051 10102	1k 2% 0,25W
3680	4822 051 20681	680R 5% 0,1W
3681	4822 051 20223	22k 5% 0,1W
3682	4822 052 10228	2R2 5% 0,33W
3683	4822 051 10102	1k 2% 0,25W
3684	4822 050 25603	56k 1% 0,6W
3685	4822 050 24702	4k7 1% 0,6W
3686	4822 050 21002	1k 1% 0,6W
3687	4822 051 10102	1k 2% 0,25W
3688	4822 050 22202	2k2 5% 0,125W
3689	4822 050 22202	2k2 1% 0,6W
3752	4822 052 10478	4R7 5% 0,33W
3754	4822 050 24702	4k7 5% 0,125W
3755	4822 050 21003	10k 1% 0,6W
3756	4822 050 21003	10k 1% 0,6W
3803	4822 051 10008	jumper
3807	4822 051 10008	jumper
3815	4822 051 10008	jumper
3821	4822 051 10008	jumper

Coils

5660	4822 157 60363	
5661	4822 157 60363	

Semiconductors

6570	4822 130 30621	1N4148
6600	4822 130 30621	1N4148
6610	5322 130 30684	1N4002
6611	5322 130 30684	1N4002
6620	4822 130 30621	1N4148
6621	4822 130 34174	BZX79-C4V7
6680	5322 130 30684	1N4002
6681	5322 130 30684	1N4002
6682	5322 130 30684	1N4002
6683	5322 130 30684	1N4002
6684	4822 130 34174	BZX79-C4V7
6685	4822 130 34173	BZX79-C5V6
6752	5322 130 30684	1N4002
6753	4822 130 34281	BZX79-C15
6754	5322 130 30684	1N4002
6755	4822 130 31981	BZX79-C3V9
6760	5322 130 30684	1N4002
6761	5322 130 30684	1N4002
6770	5322 130 30684	1N4002
6771	5322 130 30684	1N4002
7530	4822 209 73235	TDA8809T/C2
7560	4822 209 72587	TCA0372DP2
7570	4822 209 62112	M50423FP
7575	4822 209 70422	MN4264-15
7590	4822 209 63915	MC68HC05C8/ZC99892
7600	4822 130 44104	BC328
7601	4822 130 61207	BC848
7602	4822 130 61207	BC848
7620	4822 209 80797	LM393N
7640	4822 209 73236	TDA1543/N2
7650	4822 130 61207	BC848
7651	5322 130 42012	BC858
7652	4822 130 61207	BC848
7653	4822 130 61207	BC848
7660	4822 209 83163	LM833N
7661	4822 209 83163	LM833N
7680	5322 130 42012	BC858
7681	4822 130 61207	BC848
7684	4822 130 42696	BC818-25
7685	4822 130 42696	BC818-25
7750	5322 209 11222	MC7905CT
7751	4822 130 61207	BC848
7752	4822 130 44121	BC338
7753	5322 130 42012	BC858
7760	4822 209 71579	TY40408
7770	4822 209 73233	MC79L05ACP

PHOTODIODE SIGNA

Miscellaneous

SK3	4822 276 1	

Capacitors

2500	4822 122 3	
2501	4822 122 3	
2502	5322 122 3	
2503	4822 122 3	
2504	4822 122 3	
2505	4822 121 4	
2506	5322 122 3	
2507	4822 122 3	
2508	5322 122 3	
2509	4822 121 4	
2510	4822 121 5	
2511	5322 122 3	
2514	4822 121 5	
2515	4822 122 3	
2516	4822 121 4	
2517	4822 122 3	
2540	4822 122 3	
2541	4822 122 3	
2542	4822 124 4	
2543	4822 122 3	
2550	4822 122 3	
2551	4822 124 4	

Resistors

3500	4822 050 2	
3501	4822 051 2	
3502	4822 051 2	
3503	4822 051 2	
3504	4822 051 1	
3505	4822 051 2	
3506	4822 051 2	
3510	4822 051 2	
3511	4822 051 2	
3512	4822 051 2	
3513	4822 050 2	
3514	4822 051 2	
3515	4822 100 1	
3516	4822 050 2	
3517	4822 051 2	
3518	4822 052 1	
3519	4822 052 1	
3541	4822 050 2	
3542	4822 050 2	
3543	4822 052 1	
3544	4822 052 1	
3545	4822 051 2	
3546	4822 052 1	
3550	4822 052 1	
3551	4822 052 1	
3552	4822 051 2	
3553	4822 050 2	
3554	4822 050 2	
3555	4822 101 1	
3816	4822 051 1	
3817	4822 051 1	
3820	4822 051 1	

3640	4822 052 10108	1R 5% 0,33W
3641	4822 051 20272	2k7 5% 0,1W
3650	4822 050 22203	22k 1% 0,6W
3651	4822 051 20472	4k7 5% 0,1W
3652	4822 051 20223	22k 5% 0,1W
3653	4822 050 21003	10k 1% 0,6W
3654	4822 051 10102	1k 2% 0,25W
3655	4822 051 10102	1k 2% 0,25W
3656	4822 051 20561	560R 5% 0,1W
3657	4822 051 20561	560R 5% 0,1W
3658	4822 051 20475	4M7 5% 0,1W
3659	4822 051 20475	4M7 5% 0,1W
3660	4822 051 20272	2k7 5% 0,1W
3661	4822 051 20272	2k7 5% 0,1W
3662	4822 051 20122	1k2 5% 0,1W
3663	4822 051 10122	1k2 2% 0,25W
3664	4822 051 20122	1k2 5% 0,1W
3665	4822 051 20122	1k2 5% 0,1W
3666	4822 051 20242	2k4 5% 0,1W
3667	4822 051 20242	2k4 5% 0,1W
3668	4822 051 20122	1k2 5% 0,1W
3669	4822 051 20122	1k2 5% 0,1W
3670	4822 052 10228	2R2 5% 0,33W
3671	4822 052 10228	2R2 5% 0,33W
3672	4822 051 20223	22k 5% 0,1W
3673	4822 051 20223	22k 5% 0,1W
3676	4822 050 21002	1k 1% 0,6W
3677	4822 051 10102	1k 2% 0,25W
3680	4822 051 20681	680R 5% 0,1W
3681	4822 051 20223	22k 5% 0,1W
3682	4822 052 10228	2R2 5% 0,33W
3683	4822 051 10102	1k 2% 0,25W
3684	4822 050 25603	56k 1% 0,6W
3685	4822 050 24702	4k7 1% 0,6W
3686	4822 050 21002	1k 1% 0,6W
3687	4822 051 10102	1k 2% 0,25W
3688	4822 050 22202	2k2 5% 0,125W
3689	4822 050 22202	2k2 1% 0,6W
3752	4822 052 10478	4R7 5% 0,33W
3754	4822 050 24702	4k7 5% 0,125W
3755	4822 050 21003	10k 1% 0,6W
3756	4822 050 21003	10k 1% 0,6W
3803	4822 051 10008	jumper
3807	4822 051 10008	jumper
3815	4822 051 10008	jumper
3821	4822 051 10008	jumper

5660	4822 157 60363	
5661	4822 157 60363	

6570	4822 130 30621	1N4148
6600	4822 130 30621	1N4148
6610	5322 130 30684	1N4002
6611	5322 130 30684	1N4002
6620	4822 130 30621	1N4148
6621	4822 130 34174	BZX79-C4V7
6680	5322 130 30684	1N4002
6681	5322 130 30684	1N4002
6682	5322 130 30684	1N4002
6683	5322 130 30684	1N4002
6684	4822 130 34174	BZX79-C4V7
6685	4822 130 34173	BZX79-C5V6
6752	5322 130 30684	1N4002
6753	4822 130 34281	BZX79-C15
6754	5322 130 30684	1N4002
6755	4822 130 31981	BZX79-C3V9
6760	5322 130 30684	1N4002
6761	5322 130 30684	1N4002
6770	5322 130 30684	1N4002
6771	5322 130 30684	1N4002
7530	4822 209 73235	TDA8809T/C2
7560	4822 209 72587	TCA0372DP2
7570	4822 209 62112	M50423FP
7575	4822 209 70422	MN4264-15
7590	4822 209 63915	MC68HC05C8/ZC99892
7600	4822 130 44104	BC328
7601	4822 130 61207	BC848
7602	4822 130 61207	BC848
7620	4822 209 80797	LM393N
7640	4822 209 73236	TDA1543/N2
7650	4822 130 61207	BC848
7651	5322 130 42012	BC858
7652	4822 130 61207	BC848
7653	4822 130 61207	BC848
7660	4822 209 83163	LM833N
7661	4822 209 83163	LM833N
7680	5322 130 42012	BC858
7681	4822 130 61207	BC848
7684	4822 130 42696	BC818-25
7685	4822 130 42696	BC818-25
7750	5322 209 11222	MC7905CT
7751	4822 130 61207	BC848
7752	4822 130 44121	BC338
7753	5322 130 42012	BC858
7760	4822 209 71579	TY40408
7770	4822 209 73233	MC79L05ACP

PHOTODIODE SIGNAL CONTROLLER PANEL

Miscellaneous

SK3	4822 276 13106	

2500	4822 122 33809	22nF 20% 50V
2501	4822 122 33496	100nF 10% 63V
2502	5322 122 32268	470pF 10% 50V
2503	4822 122 33496	100nF 10% 63V
2504	4822 122 33175	2,2nF 20% 50V
2505	4822 121 43526	47nF 5% 100V
2506	5322 122 32531	100pF 5% 50V
2507	4822 122 33177	10nF 20% 50V
2508	5322 122 34123	1nF 10% 50V
2509	4822 121 42408	220nF 5% 63V
2510	4822 121 51252	470nF 5% 63V
2511	5322 122 34123	1nF 10% 50V
2514	4822 121 51252	470nF 5% 63V
2515	4822 122 33339	4,7nF 10% 50V
2516	4822 121 42408	220nF 10% 63V
2517	4822 122 33496	100nF 10% 63V
2540	4822 122 33496	100nF 10% 63V
2541	4822 122 33496	100nF 10% 63V
2542	4822 124 41583	0,68µF 20% 50V Bipolar
2543	4822 122 33496	100nF 10% 63V
2550	4822 122 32575	220pF 10% 500V
2551	4822 124 40272	33µF 20% 16V

3500	4822 050 24702	4k7 1% 0,6W
3501	4822 051 20104	100k 5% 0,1W
3502	4822 051 20123	12k 5% 0,1W
3503	4822 051 20101	100R 5% 0,1W
3504	4822 051 10102	1k 2% 0,25W
3505	4822 051 20243	24k 5% 0,1W
3506	4822 051 20562	5k6 5% 0,1W
3510	4822 051 20113	11k 5% 0,1W
3511	4822 051 20124	120k 5% 0,1W
3512	4822 051 20154	150k 5% 0,1W
3513	4822 050 28203	82k 1% 0,6W
3514	4822 051 20564	560k 5% 0,1W
3515	4822 100 11193	22k 20%LIN 0,05W
3516	4822 050 24704	470k 5% 0,125W
3517	4822 051 20473	47k 5% 0,1W
3518	4822 052 10279	27R 5% 0,33W
3519	4822 052 10229	22R 5% 0,33W
3541	4822 050 26802	6k8 1% 0,6W
3542	4822 050 26802	6k8 1% 0,6W
3543	4822 052 10228	2R2 5% 0,33W
3544	4822 052 10228	2R2 5% 0,33W
3545	4822 051 20339	33R 5% 0,1W
3546	4822 052 10478	4R7 5% 0,33W
3550	4822 052 10189	18R 5% 0,33W
3551	4822 052 10129	12R 5% 0,33W
3552	4822 051 20101	100R 5% 0,1W
3553	4822 050 22202	2k2 1% 0,6W
3554	4822 050 22201	220R 1% 0,6W
3555	4822 101 10685	4k7 20%LIN 0.05W
3816	4822 051 10008	jumper
3817	4822 051 10008	jumper
3820	4822 051 10008	jumper

6540	4822 130 30861	BZX79-C7V5
6541	4822 130 30861	BZX79-C7V5
6550	4822 130 30621	1N4148
7500	4822 209 73234	TDA8808T/C3
7510	4822 209 72587	TCA0372DP2
7550	4822 130 44121	BC338

CONTROL AND DISPLAY PANEL

Miscellaneous

	4822 256 91782	DISPLAY HOLDER
1001	4822 071 51002	FUSE T1A
1002	4822 071 55001	FUSE T500mA
1013	4822 276 13104	TACT SWITCH
1014	4822 276 13104	TACT SWITCH
1015	4822 276 13104	TACT SWITCH
1016	4822 276 13104	TACT SWITCH
1020	4822 276 13104	TACT SWITCH
1021	4822 276 13104	TACT SWITCH
1022	4822 276 13104	TACT SWITCH
1023	4822 276 13104	TACT SWITCH
1024	4822 276 13104	TACT SWITCH
1027	4822 276 13104	TACT SWITCH
1028	4822 276 13104	TACT SWITCH
1030	4822 130 90994	DISPLAY 6-BT165Gk
1031	4822 276 13104	TACT SWITCH
1034	4822 276 13104	TACT SWITCH
1035	4822 276 13104	TACT SWITCH

Crystal

1502	4822 242 72527	4.00MHz CERAMIC

2002	4822 124 41596	22µF 20% 50V
2004	4822 124 41596	22µF 20% 50V
2005	5322 121 42386	100nF 5% 63V

3001	4822 052 10108	1R 5% 0,33W
3002	4822 050 22203	22k 1% 0,6W
3004	4822 050 23302	3k3 1% 0,6W
3012	4822 052 10108	1R 5% 0,33W
3015	4822 050 22203	22k 1% 0,6W
3016	4822 050 22203	22k 1% 0,6W
3017	4822 050 22203	22k 1% 0,6W
3018	4822 050 22203	22k 1% 0,6W
3019	4822 050 22204	220k 1% 0,6W
3020	4822 050 22203	22k 1% 0,6W

6001	4822 130 30613	BAW62
6004	4822 130 30613	BAW62
6005	4822 130 30613	BAW62
6006	4822 130 30613	BAW62
6007	4822 130 30613	BAW62
7001	4822 209 30249	47C212

MISCELLANEOUS

1501	4822 070 31001	FUSE T100mA
5500	4822 146 30986	MAINSTRANSFORMER

PHILIPS

Vorh.

Sachgebiet: AC 52 Compact Disc

SI

Wichtig für die Werkstatt!

Nummer: 52069

Datum: 03.12.91

Service Information

Betrifft: Compact-Disc-Spieler
CD 115
Service-Hinweise

Verteiler: INTERN UND EXTERN

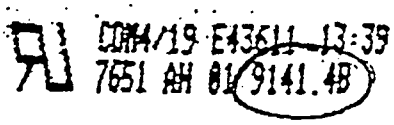
Bei Geräten aus einem eng begrenzten Fertigungszeitraum kann es geschehen, daß das Inhaltsverzeichnis einer CD nicht gelesen wird und daß der Spieler nicht in Play-Funktion geht. Das Display zeigt ERROR.

Ursache ist Schwergängigkeit des Rafoc-Arms infolge der Verwendung eines zu steifen Fetts. Zur Abhilfe des o.g. Fehlers muß das Laufwerk gewechselt werden.

Betroffene Laufwerke CDM4/19 sind zu erkennen an der Fertigungswoche:

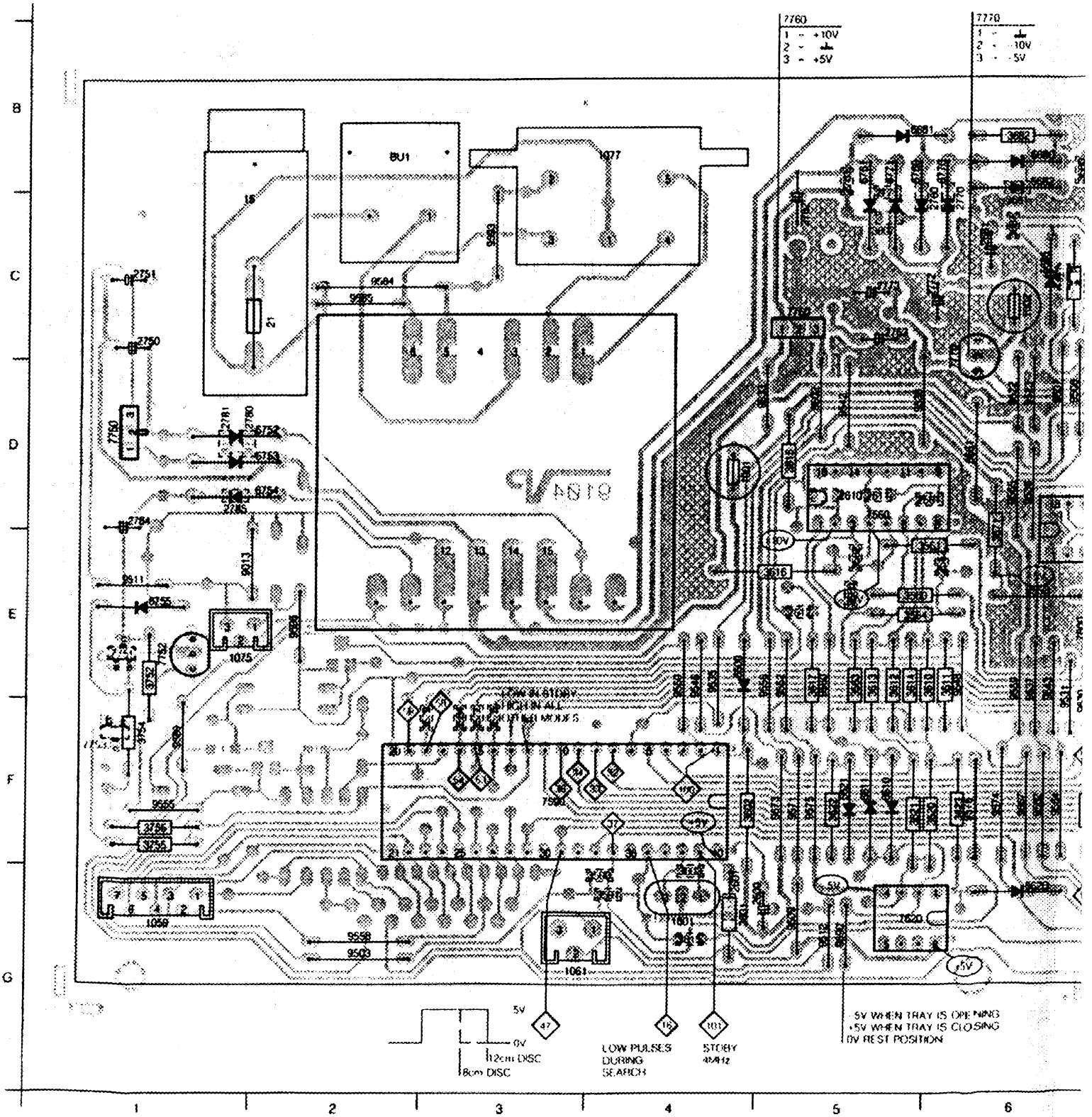
- Aufdruck 9135 bis 9138 bei Laufwerkaufkleber

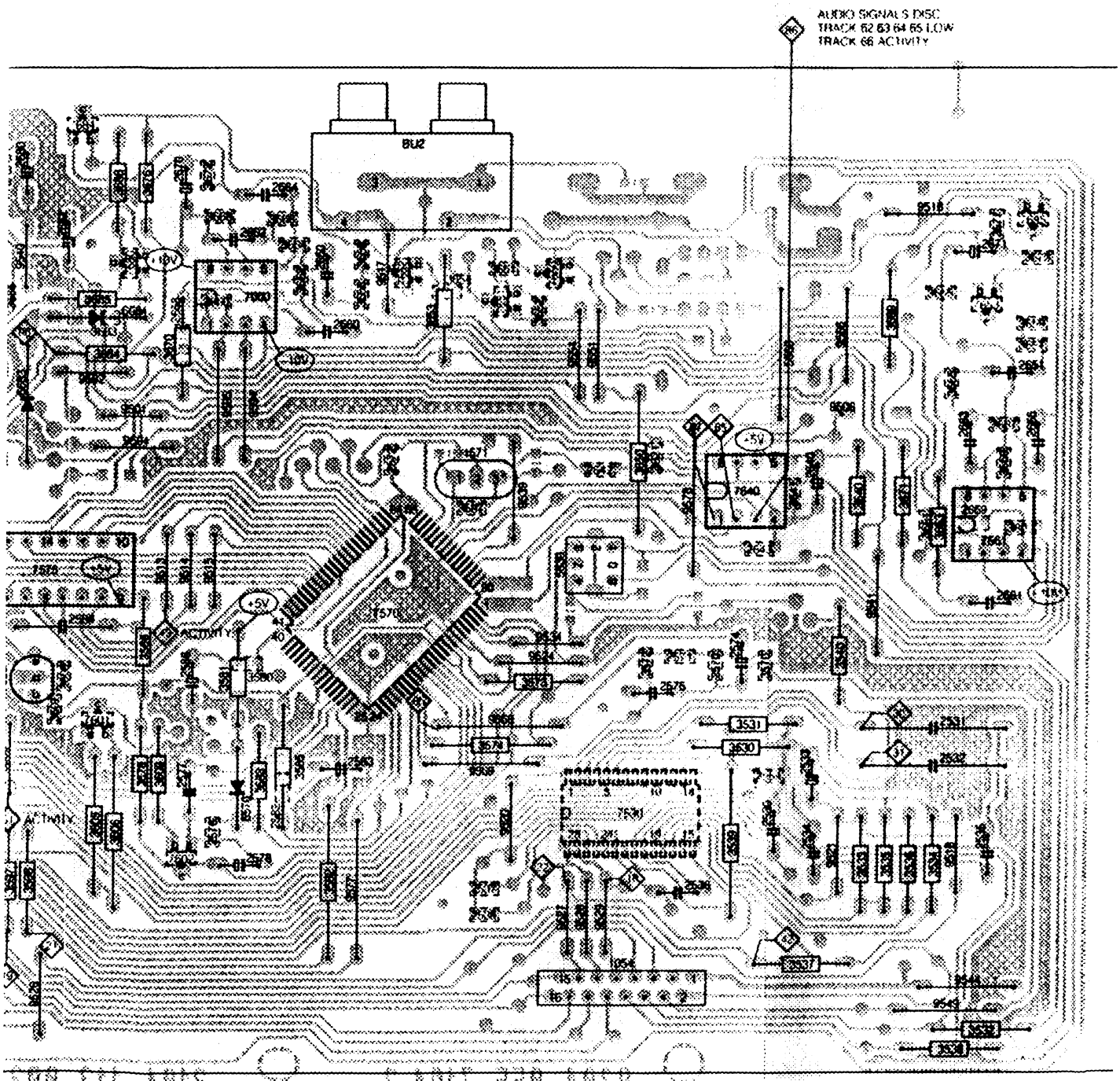
- Aufdruck 9134.4A bis 9138.4A bei Laufwerkaufkleber



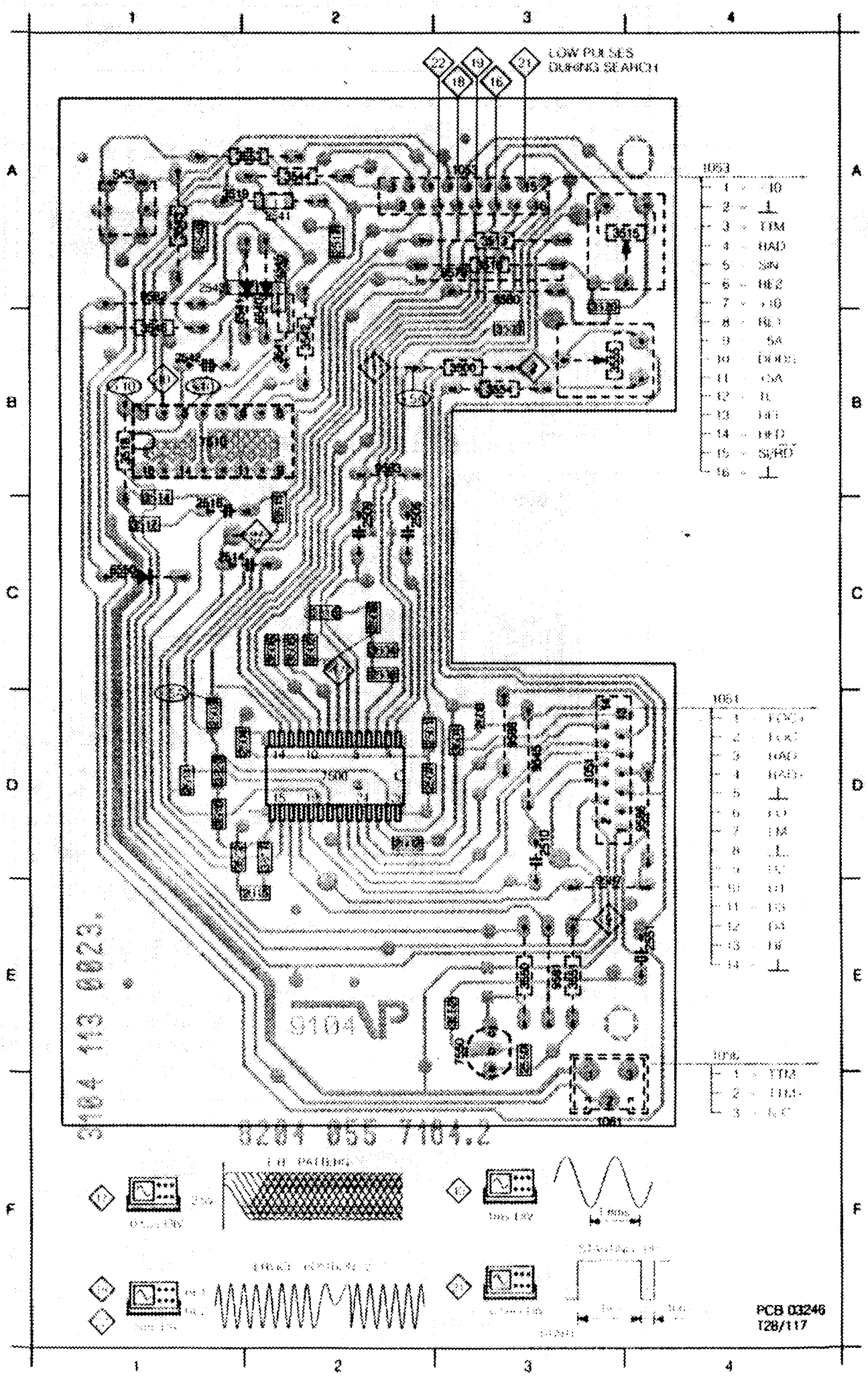
4812 829 52069

Form 80048

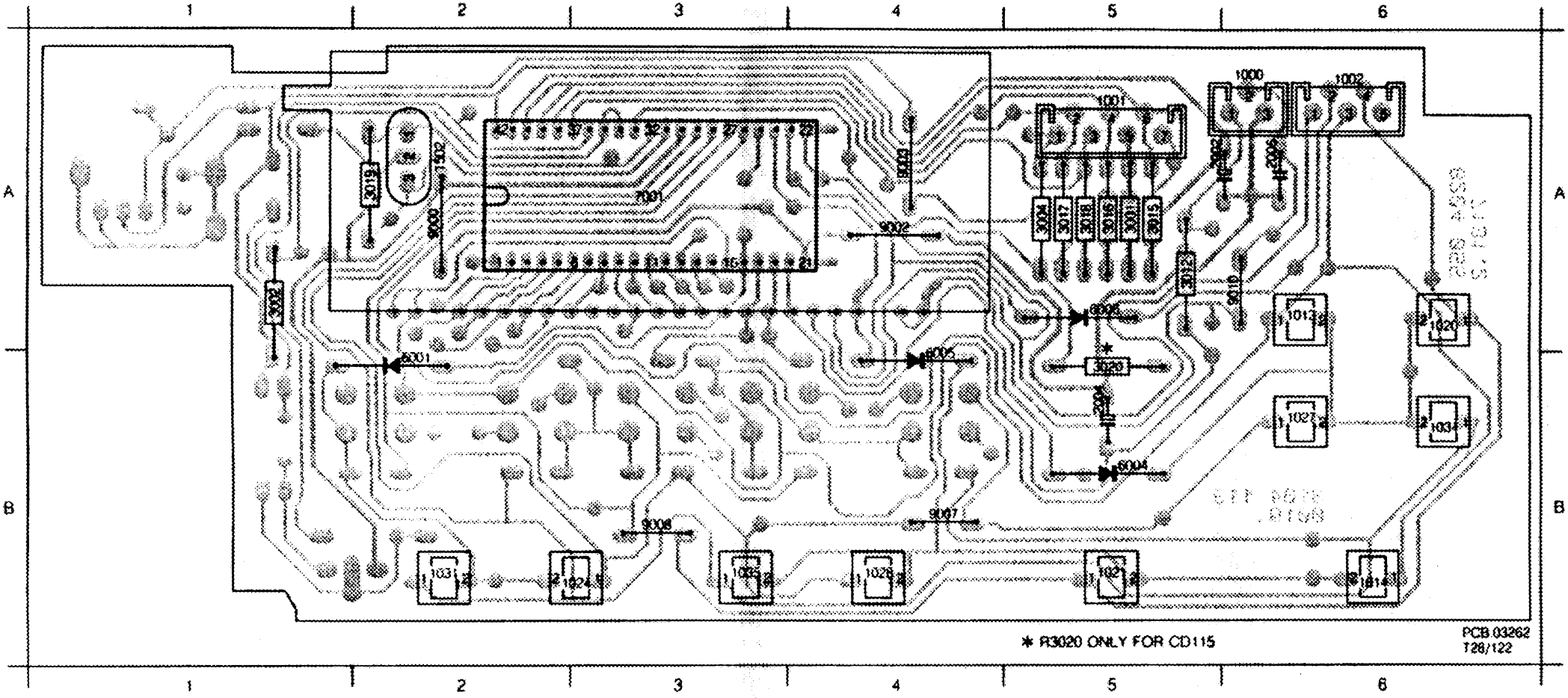

7760
1 - +10V
2 - ⏚
3 - +5V
7770
1 - ⏚
2 - -10V
3 - -5V
BU1
1077
1075
1059
1061
1601
7620
7500
+10V
+5V
5V
0V
12cm DISC
8cm DISC
LOW PULSES
DURING
SEARCH
STDBY
-5V WHEN TRAY IS OPENING
+5V WHEN TRAY IS CLOSING
0V REST POSITION


AUDIO SIGNALS DISC
TRACK 62 63 64 65 LOW
TRACK 66 ACTIVITY
BU2
7000
7570
7640
7530
ACTIVITY
+5V
+8V
-8V

PANEL COMPONENT SIDE



1000 A6	1020 A6	1031 B2	2004 B5	3012 A5	3019 A2	6006 A5	9007 B4
1001 A5	1021 B5	1034 B6	2005 A6	3015 A5	3020 B5	7001 A3	9008 B3
1002 A6	1024 B2	1035 B3	3001 A5	3016 A5	6001 B2	9000 A2	9010 A6
1013 A6	1027 B6	1502 A2	3002 A1	3017 A5	6004 B5	9002 A4	
1014 B6	1028 B4	2002 A5	3004 A5	3018 A5	6005 B4	9003 A4	



1000 A6	1020 A6	1031 B2	2004 B5	3012 A5	3019 A2	6006 A5	9007 B4
1001 A5	1021 B5	1034 B6	2005 A6	3015 A5	3020 B5	7001 A3	9008 B3
1002 A6	1024 B2	1035 B3	3001 A5	3016 A5	6001 B2	9000 A2	9010 A6
1013 A6	1027 B6	1502 A2	3002 A1	3017 A5	6004 B5	9002 A4	
1014 B6	1028 B4	2002 A5	3004 A5	3018 A5	6005 B4	9003 A4